

American Artisan

and

Hardware Record

Sheet Metal Roofing - Water Air Purifiers - Stoves

Vol. 91, No. 15

CHICAGO, APRIL 10, 1926.

\$2.00 Per Year

Passmore M 0707

110 WEST REED
METAL &
PASSMORE
ROOFING
CO.

OKLAHOMA CITY, OKLAHOMA
February 3, 1926.

The New Jersey Zinc Company,
160 Front Street,
New York, N. Y.

Gentlemen: Up to the present time we have installed one hundred and sixty five squares of Horse Head Zinc roofing; two jobs being batten type construction of fifty squares each, and one job a standing seam roof of sixty five squares. On two of these jobs the gutters were OG pattern and the downspouts were square and corrugated, which we made up in our shop. These installations have been completed from twelve to eighteen months each and we have had no trouble to splits or breaks due to contraction or expansion. Horse Head Zinc is very pliable and as easy to work up as copper. It has none of the brittle quality found in common zinc and can be used anywhere the same as copper or galvanized iron on outside work.

In our judgment we have given Horse Head Zinc a severe test in regards its adaptability to withstand sudden and severe changes in temperature such as this climate is subject to. It has thoroughly convinced us that for a long life roof it is as good as the best, and one third cheaper.

Yours truly,
B & H Passmore Metal & Roofing Co.

825 S. 8th

100:823

"As good as the best and one-third cheaper"

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Geers Court Apartments, Oklahoma City,
Oklahoma. One of the Passmore Co. installations of Standing Seam Horse Head Zinc Roofing.

HORSE HEAD ZINC

The New Jersey Zinc Company

Established 1848

Products Distributed by

The New Jersey Zinc Sales Company

160 Front Street, New York City

CHICAGO • PITTSBURGH • CLEVELAND • SAN FRANCISCO



Send the coupon for a sample and see for yourself how easy it is to work Horse Head Zinc.

THE NEW JERSEY ZINC COMPANY
160 FRONT STREET, NEW YORK CITY

PLEASE SEND ME A SAMPLE OF HORSE HEAD ZINC SO THAT I CAN TEST ITS WORKING QUALITIES.

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ADDRESS _____

Right Here in Your Own Town

-there are forced-air heating jobs waiting to be picked!

Ideal Equipment for Heating
 Large Residences
 Public Garages
 Schools
 Churches
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 Store Buildings
 Warehouses
 Factories

YOU know the kind—garages, foundries, warehouses, factories—jobs where radiation used to be the only heating method considered.

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This Mueller Direct-Fired Forced Air Unit Heater provides a positive circulating system for peak loads and quick heating periods; and a gravity system with proper free area for night operation or when building is unoccupied. No danger of breakages or shut downs for plant owners; no licensed engineer needed to run it. Uses hard or soft coal, coke, gas or oil-burner.

Man, it's a gold mine for the Warm Air Heating Trade. Be among the first to tap this added source of profits!

Our Engineering Department will help you plan installations and assist you in the sale of Mueller equipment. Write for descriptive folders and details of our selling proposition.

L. J. MUELLER FURNACE COMPANY

Established 1857 193 Reed St., Milwaukee, Wis.

Builders of Heating Systems of All Types

BRANCH OFFICES:

Chicago, Detroit, St. Louis,
 St. Paul, Minneapolis, Ft. Collins,
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Ask about our Retail Business
 Practice Service for
 Mueller dealers.

For forced-air residence jobs where the heat is conveyed through warm air pipes, the reversible cowl shown in this illustration is not used.



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• Direct-Fired •
 Forced Air Unit

WEIR FURNACE
SERIAL NO. 67890
GUARANTEED WHEN INSTALLED
ACCORDING TO THE
STANDARD CODE
SIZE 430
WARM & COLD AIR
CIRCULATION 865 Sq. In.
B. T. U. CAPACITY 119347
THE MEYER FURNACE CO. MFRS.
PEORIA, ILLINOIS

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THE fact that WEIR dealers welcomed this WEIR Certified brass plate feature is still another proof that the WEIR is sold only on a basis of high quality.

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To top even such a strong sales point as this is the *WEIR Five Year Guarantee*. The WEIR Guarantee is unlike any other furnace guarantee—it covers the entire WEIR furnace—grates, fire pot and each and every other part of the furnace. This guarantee is direct to the user and it has *no strings*.

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The pouches or feed and ash throats of the WEIR extend clear through the front—there are no door frames and no joints inside the casing.

Both pouches and doors are surface ground, assuring perfect fit.

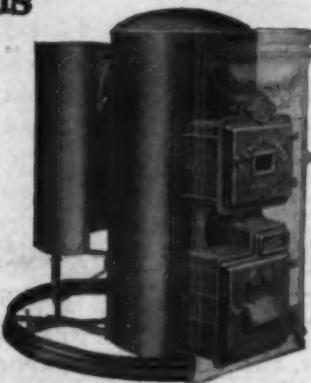
There are numerous other WEIR features—the description of WEIR Construction is interesting—just tell us to send the construction details along with WEIR agency information.

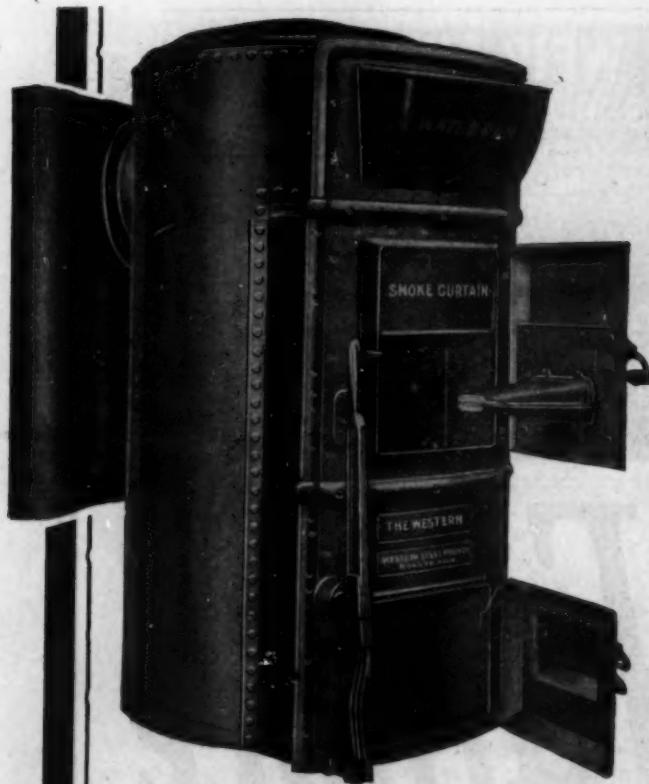
The MEYER FURNACE CO.
Peoria, Illinois



*Write for the
"Weir Book of Facts"*

the
Certified





No frills, no weak spots, no foolishness—nothing but high quality, real features and sturdy construction all backed up by an Iron Clad Guarantee.

THE Western has forged ahead in territory after territory simply because live dealers have found it above expectations in quality and users have been enthusiastic over results obtained. The best argument we can offer you as to the merits of the Western is the Western furnace itself.

We are always glad to make arrangements for placing a Western on your floor—all you have to do is tell us you are interested.

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WESTERN BOILER PLATE FURNACE

is a strictly high quality steel furnace selling at a very economical price. Its agency is unusually attractive both from a quality and profit angle.

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KANSAS AND MISSOURI
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circulars
and prices.

Agency
details on
request.

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DULUTH, MINN. MINNEAPOLIS, MINN.

Mention AMERICAN ARTISAN in your reply—Thank you!



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No matter how many years' experience you have had, nor how carefully you do your work, you have got to build the job around a good furnace.

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**Cut-away View of
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UNDER the new Utica Merchandising Plan our representatives co-operate closely with our dealers and help them sell the furnaces they buy. We have a definite Merchandising Plan which brings you new customers—sells more furnaces—and increases profits. It has been thoroughly tested by Utica dealers and is a proved success.

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The new Utica Merchandising Plan places Utica dealers in a distinct class—*above competition*. It enables them to get the greatest possible amount of business and secure satisfied customers who build future business. It will pay you to sit down—right now—and write us to send, without obligation to you, full particulars of the new Utica Merchandising Plan.

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New name, new features, old time high quality,
improved construction, a
new size and also a new
furnace—

AFCO

New Copyrighted Name of American Furnaces

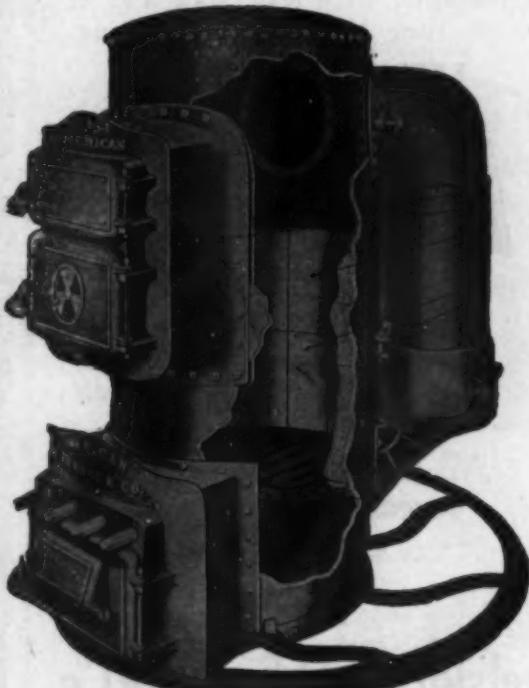
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We have increased our production facilities also by installing \$50,000 worth of new machinery. We want to tell you in detail all about the improvements on AFCO BOILER PLATE FURNACES and the new size and also our NEW CRESCENT TYPE RADIATOR STEEL FURNACE.

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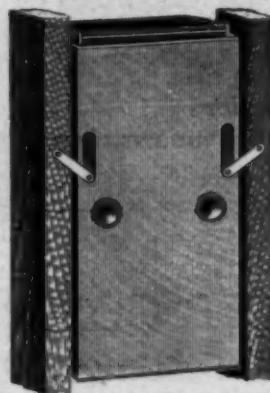


"AFCO" BOILER PLATE FURNACE
(Formerly Known as the AMERICAN)



IF YOUR COMPETITORS ARE UNDERBIDDING YOU

Lower your installation expense
and NOT your reputation.



EXCELSIOR FURNACE PIPE and FITTINGS, made of full-weight material, sturdily constructed to withstand hard usage, and finely finished are installed with less labor and in shorter time than any other line.

EVERY FITTING FITS



The lowered extension collar on EXCELSIOR SELF-POSITIONING STACK HEADS reduces your installation cost.

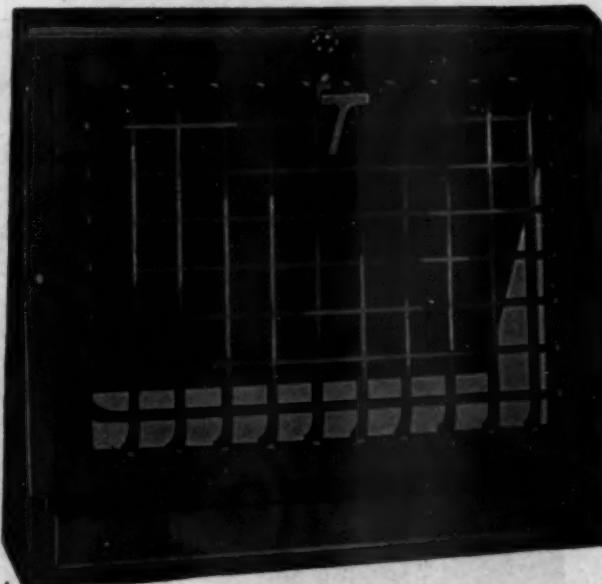
**No extra charge for
Excelsior quality**

MAY WE QUOTE YOU?

THE

Excelsior Steel Furnace Co.

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CHICAGO ILLINOIS



Have you seen it?

WALWORTH New Standardized STYLE B Baseboard Register

NOT only made throughout in accordance with the rules of the Standardization Committee but it is the *neatest* durable register ever made to sell at a popular price.

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8x10	inch	2 $\frac{1}{4}$	base extension
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9x12	"	2 $\frac{1}{4}$	"
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Study the features of this new register.

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Order some for that next job—your customers will want them.

*Made by the makers of Walworth Double Gratings,
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PHILLIPS & BUTTOFF MFG. CO., Nashville, Tenn.

Eastern Representation:
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THE dealer doing business with Wise furnaces and the Wise agency sells furnaces that have proven successful and unusually satisfactory for over twenty years.

He offers to his public furnaces that are noted for their great durability and numerous heating and convenience features.

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Highest Quality, Best Workmanship, and Absolute Satisfaction to the dealers.

Wise furnaces represent high grade warm air heating service at an economical cost.

Write for interesting catalog and agency details NOW

The WISE FURNACE CO.
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Mention AMERICAN ARTISAN in your reply—Thank you!



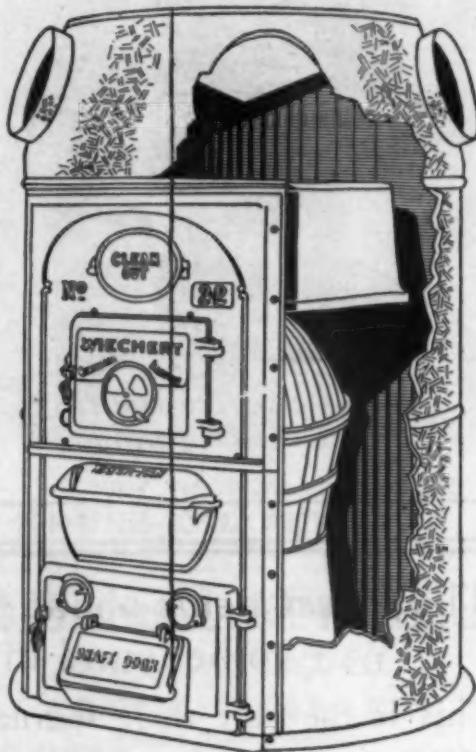
Big money in big sales!

PICK out the large houses, the stores, the shops, where a big space must be heated. They are your big-profit prospects. They need Wiechert Pipe Furnaces—No. 20 Series, Round Type, or the Heavy Duty Type. The well known Wiechert features of construction guarantee performance, economy, and long service. It's as easy to make a big sale as a little one—and the profit is better.

*Get our discounts.
They mean something.*

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Centralia, Ill.

No. 20 Series Pipe Furnace



A complete Furnace and Supply Service!

THE furnaces shown here, the Nesbit, the Weir and the Stanco, fit your every requirement for quality warm air heating and at the right price.

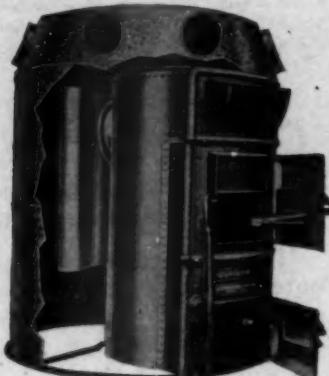


Weir All-Steel Furnace



Nesbit All-Cast Furnace

LET us send you full details and catalogs covering this line. Let us show you the completeness of our furnace line and demonstrate our reliable service.



Stanco Steel Furnace

WE carry large stocks of every needed furnace supply item from Registers to Furnace Cement. All leading makes and dependable quality.

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we will give you real service.*

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Sioux City, Iowa



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You can sell every prospect because

We have a size and style for every job.
Our prices and exclusive features eliminate competition.
Our guarantee of quality and long service speaks for itself.
We offer merchandising helps.

**The inevitable volume of sales from a proven leader
means big profits.**

Remember, we sell only to the trade.

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Our furnaces are built durable, of the best materials to give long life.
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interchangeable—Perfectly suited to any fuel.

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THE FLORAL CITY HEATER CO.

Monroe, Michigan

**The latest news about the Warm Air Heating Industry is
to be found in this Journal every week.**

This is the only trade Journal covering this field published **every week**.

BOOMER

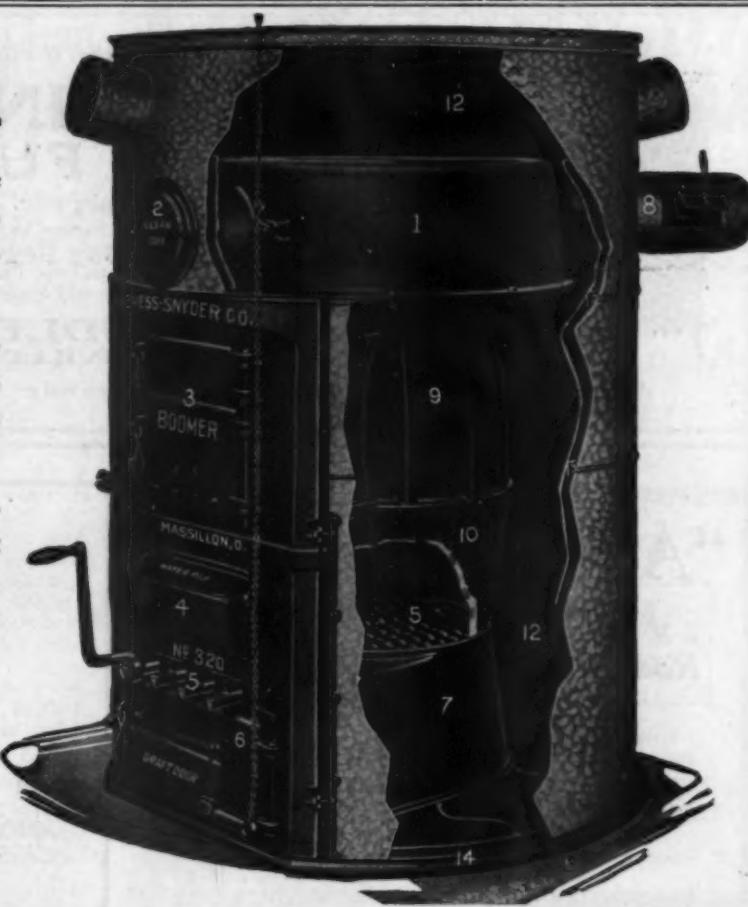
THIS is our latest addition to the Boomer line. We heartily recommend it for your favorable consideration.

The severe tests we have given this furnace have proven its durability. The unsolicited reports we received from users last winter have been most flattering.

For durability, economy, easy to operate, easy to set up and the low price at which we offer this furnace, you will make no mistake in arranging for the agency.

THE HESS-SNYDER CO.
MASSILLON, OHIO

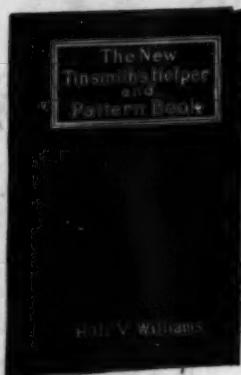
Makers of BOOMER FURNACES for Forty-Three Years



352
Pages

247
Figures

165
Tables



Flexible
Leather
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Measures
4 1/2 x 5 in.

One of the Best and Most Popular Books

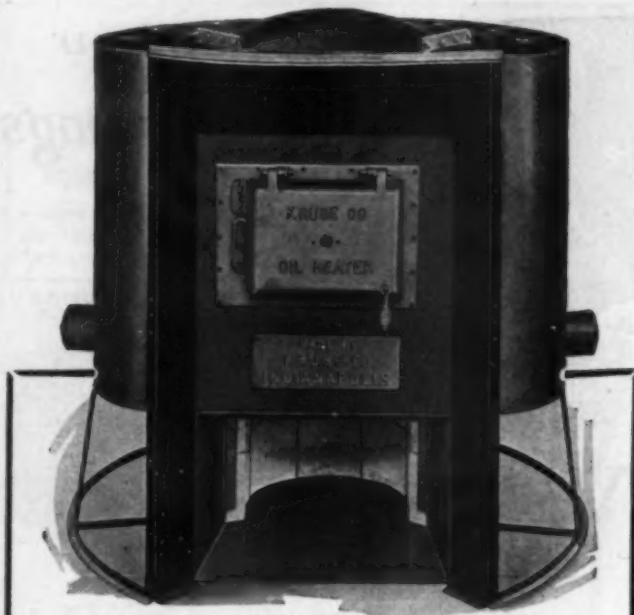
on tinsmithing and elementary sheet metal work. This is the latest edition and the contents are new excepting the chapter on Mensuration, which has been re-arranged and amplified, and possibly some fifty pages of problems and tables which are classified to the phase of the work they cover.

**This Book Covers Simple Geometry and
Every Phase of Modern Pattern Cutting**
from the making of every type of Seam, Lap and Joint, to Conical Problems and Tinware, Elbows, Piping, Ducts, Gutters, Leaders, Cornice and Skylight Work and Furnace Fittings.
In fact an excellent all-around book for every man in the trade. Mr. Williams writes in an easy-to-read, helpful manner, giving you all the necessary details about each subject he handles. You should add this widely read book to your collection now.

PRICE \$3.00

**AMERICAN ARTISAN
AND
HARDWARE RECORD**

620 South Michigan Avenue, Chicago, Ill.



KRUSE OIL FURNACE

Oil is the modern fuel and the Kruse Oil Furnace is scientifically designed and constructed to use oil—efficiently and economically. Its special welded steel construction, tubular design, and immense heating surface insure maximum results.

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*Write today for details on this and on
regular welded steel coal burning furnaces.*

KRUSE COMPANY
Welded Steel Furnaces
INDIANAPOLIS INDIANA

The Improved Air Duct [Increases [the Heating Capacity about 30 per cent in our



WASHINGTON HOME FURNACE

Placed above floor, hence saves the cost of digging cellar. Produces circulating moist heat for 5 to 7 rooms. Is the most beautiful, economical and efficient Furnace on the market. It can be installed in a living room. No basement required. Our Gigantic Advertising Campaign during the Fall of 1926, will reach over *Six Million Homes*. Through National Magazines, Farm Papers and Metropolitan Newspapers, thousands in your territory will be interested. Your Section may be open. Write now for the complete details.

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NASHVILLE, TENN.

"We melt over 100,000 Pounds of Southern Pig Iron Daily"

"American Seal" FURNACE CEMENT

*Roof Cement — Stove Putty
Plumbers Putty*

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JAMES L. PERKINS

Western Distributor

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To Buy your
Stove Trimmings
From Us*

LARGE selection—
beautifully finished.
Made from our own
steel.

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Let us quote you

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COMPANY
THE MILL COMPLETE

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You'll find this book handy. It explains
how and simplifies ordering Stove, Furnace and Boiler repairs from the—

Largest and Most Complete Stock

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STOVE REPAIR CO., CHICAGO

Your
attention
is called
to the fact
that we
are able to
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Books
Patterns
and
Charts
for
Sheet Metal Work

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and
special circulars

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AND
HARDWARE RECORD**

620 S. Michigan Ave., Chicago, Ill.

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The Sturtevant Portable Suction Cleaner has a powerful suction. It is ruggedly built, easy to handle and can be operated from an ordinary electric light socket.

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1461

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Makes them Absolutely Gas-tight

USED FURNACES do not have to be torn down to be re-sealed, just paint INSA-LUTE over the old asbestos cement. It penetrates into all cracks and will withstand white heat.

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A new use for a Famous Material



Trial Offer
Order an 8-lb. half gallon can at \$2.00, if it is not satisfactory, you need not pay for it.

We also manufacture
Porcelain Stove Leg-stands

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WE MANUFACTURE A COMPLETE LINE OF BOLT PRODUCTS, INCLUDING STOVE BOLTS, CARRIAGE BOLTS, MACHINE BOLTS, LAG BOLTS, NUTS, ETC. ALSO STOVE RODS, SMALL RIVETS AND HINGE PINS. CATALOG ON REQUEST.

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VEDDER PATTERN WORKS
ESTABLISHED 1835
TROY, N.Y.

IRON AND WOOD STOVE PATTERNS

QUINCY PATTERN COMPANY
QUINCY, ILLINOIS

PATTERNS FOR STOVES AND HEATERS

THE CLEVELAND CASTINGS PATTERN COMPANY
CLEVELAND, OHIO

Established 1902

Order
your
supply
NOW

RUSH SERVICE
GIVEN ON ALL ORDERS
LARGE or SMALL

WE can supply you with all warm air heating equipment—from furnace cement to Warm Air Heaters.

Ask for our complete catalog No. 20
CHICAGO FURNACE SUPPLY CO.
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Chicago,
Illinois

Published to serve
the
Warm Air Furnace,
Sheet Metal, Roofing,
Stove and Hardware
Industries

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American Artisan

and
Hardware Record

Yearly Subscription
Price:
United States \$2.00
Canada . . . \$3.00
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AN ACHIEVEMENT

An explanatory note regarding service to readers of AMERICAN ARTISAN. This paper is now nearing the completion of a half century of service. For almost fifty years it has catered to the needs of the men in the industries which it represents. At no time during its long and successful career has AMERICAN ARTISAN been in a better position to render complete, adequate service to its readers than it is today. In addition to the matter contained in our regular weekly publication, we maintain Service Departments for the use of our readers. If you have a problem to solve, we courteously invite you to submit it to us for solution. In what better way can we learn of your problems than from you direct?

THE CONVENTION of the Illinois Sheet Metal Contractors' Association

IS OVER

---but---

THE REAL BUSINESS SEASON IS JUST BEGINNING!

JUST CONTINUE TO LOOK TO
F. MEYER & BRO. CO., PEORIA, ILL.

FOR "EVERYTHING NEEDED IN THE
INSTALLATION OF WARM AIR FURNACES"

Mention AMERICAN ARTISAN in your reply—Thank you!

Don't Mistake False Economy for Good Judgment



Compare Lamneck Products with others in appearance, in materials, gauge and workmanship. Put them together. See how snugly and sturdily they fit. Do this. Write for a sample. Get our catalog. Just fill in or pin to your letterhead and—

**Mail This
Coupon Now!**

THE W. E.
LAMNECK CO.

Gentlemen:

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() Sample of

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Address.....

Don't be blinded by his ballyhoo of smart buying—of savings and profits. You cannot save—you cannot profit by substitution of quality for price. False Economy hides under a clever mask. But don't mistake him for Good Judgment.

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Have us tell you of their time and money saving features. Have us show you how they cut stock investments in two.

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They are designed by skilled engineers, made by expert labor and turned out on patented machinery especially designed for the purpose. Skill, experience, and expert workmanship can make no better.

Lamnecks save valuable time, stock investment and dissatisfaction. Our 48-Hour Service backs the line itself. Write for samples or catalog.

THE W. E. LAMNECK COMPANY

416-432 Dublin Ave., Columbus, Ohio

Western Representative: THE QUICK FURNACE & SUPPLY CO., Des Moines, Iowa

LAMNECK PIPE AND FITTINGS



Vol. 91.

CHICAGO, APRIL 10, 1926.

No. 15.



1. August Hardten, John J. Scheets, W. H. Young, Jos H. Pearson, and John P. Scheets. 2. Mr. and Mrs. Leonard Snowden and C. E. Glessner. 3. Keith V. Anderson, Laura Orback, W. L. Dennis, Josephine Wiener, P. D. Evans, Grace Mulligan, J. Harvey Manny and T. Kettlewell. 4. H. L. Mueller, John C. Schultz, Gus Scheifering and A. Ziener.

Open Discussion of Vital Issues Makes Illinois Sheet Metal Convention Big Success

Group Meetings of Locals Made Definite Part of Association Work for Coming Year

By J. F. JOHNSON

THE Thirteenth Annual Convention of the Sheet Metal Contractors' Association of Illinois held April 7th and 8th at Jefferson Hotel, Peoria, Illinois, established a precedent for future conventions in the bringing forth of ideas from the floor.

Only one speaker graced the program, and the "peppy" talk of H. S. Rogers, of the Sheet Steel Trade Extension Committee, stimulated discussion of the Question Box program. The convention was called

to order at 10:00 a. m. by Secretary R. J. Jobst. President Charles N. Louis introduced Harry C. Heyl, Corporation Counsel of the City of Peoria, who took over the duties of the Honorable Louis Mueller in welcoming the delegates and their wives to Peoria.

President Louis responded to the welcome of the city's representative and proceeded to give the members an outline of the program.

President Louis said that at various meetings of the board of direc-

tors the thought had been voiced that this convention should give every man a big chance to help himself and others to ideas by talking from the floor. To do this, he explained, they found it necessary to arrange a program devoid of numerous speakers. He urged the generous use of the Question Box, which was prominently displayed on the platform.

President Louis appointed the following committee:

Resolutions: George Harms,

Jack Stowell, Ralph W. Poe.

Auditing: G. J. George, John Walter, W. L. Dennis.

Credentials: Harry Becker, Fred H. Harms, Charles G. Soedler.

Delegates to the national convention to be held at Louisville, Ken-

installation and individual circumstances or factors to be met and that a general rule for high or slow speed fans could not be given.

Joe Burgess claimed that the type and size of fan also entered into the speed question.



Illinois, Michigan and Ohio Auxiliary. Presidents: Wm. P. Laffin, Illinois; Ross Strong, Michigan; Lee W. Gillespie, Ohio.

tucky, are John Maier, R. J. Jobst, and Harry Butler, with John C. Neuman, James Barrett, H. Reuter, as alternates.

Proposals for membership was the next business, and Secretary Jobst reported that five new members had been added to the roll.

George Harms was called upon to take charge of the Question Box, and after a 5-minute recess to allow time for the collection of questions he started the fireworks.

The first question picked was, "Why don't the trade papers publish prices on Sheet Copper?"

Mr. Harms called on AMERICAN ARTISAN reporter for an answer, and it was explained that AMERICAN ARTISAN publishes the current prices on copper sheets each week.

The next question was, "Which is better, a slow speed, or high speed fan on furnace work?"

John Neuman cited various jobs of his and gave technical reasons for his opinion that high speed fans proved most satisfactory.

Ros Strong said that he believed it depended entirely on the type of

The discussion led to ways of eliminating the noises caused by operation of fans, and Mr. Neuman



Charles N. Louis
Retiring President

said that his method of heavy felt insulation of top, bottom and sides of box where fan was placed eliminated practically all noise.

"What can be done by the manufacturers to help the contractor progress and be on better terms of understanding?"

Ralph Blanchard said he was speaking as a member of the Publicity Committee of the National Warm Air Heating and Ventilating Association. He spoke in detail of the constructive work now being done by this association. He cited the coöperation which its members are giving the warm air heating contractors in form of booklets prepared by the Publicity Committee and Mr. Arny.

These booklets, he explained are free to any and all furnace men and contain many valuable pointers in salesmanship of warm air heating. Booklets for distribution to the public are also furnished free of charge.

Mr. Blanchard explained that they were pushing the Standard Code in all their printed matter both to the dealer and the public.

A question asking how poor installation work can be done away with was read.

Mr. Heast, of LaSalle, asked the question and Mr. Ludwig, of Chillicothe, also spoke about poor installations in his town.

Mr. Harms said that he was a member of the Committee of the National Warm Air Heating and Ventilating Association which is to consider ordinances which can be used and adopted by cities of different sizes throughout the country.

These ordinances, he said, were being framed to provide the user of warm air heating with better installation, better warm air heating, and consequently do away with poor installation work by law.

He advised all members to write to the National Association and if possible give an outline of ordinance or their ideas of what such an ordinance should contain.

The questions were numerous and many were read which brought no response from the floor, and were touched on by Mr. Harms.

Wednesday Afternoon

On a motion put by G. J. George, the reading of the minutes of the previous meeting was dispensed with.

H. S. Rogers of the Sheet Steel Trade Extension Committee, Pittsburgh, was the speaker on the after-

noon program. In keeping with the tone of the program Mr. Rogers swept aside preliminaries, and in his effective, clear and attention-getting manner of speaking, started to ask questions, supplying the answers himself.



G. J. George
President-Elect

He explained what the Sheet Steel Trade Extension Committee was and its purpose for being.

A clearing house of ideas, a complaint department, a research bureau, a business producing agency and a publicity department—an organization formed by a group of the majority of producers of sheet steel for the creating of new markets, regaining of lost markets and the creating of new products for already existing markets.

Mr. Rogers said he would also talk right out—he praised the men who were in attendance at the meeting and said more ought to be there—every sheet metal contractor should attend association meetings and learn about cost accounting, business conditions and markets.

Mr. Rogers reached into his bag of charts and pulled forth a chart showing the sheet tonnage used by states over a period of years—a barometer of sheet capacity—and it showed a general increase in the last few years but a drop occurring at present.

He pulled out another chart, which showed the increase in sales of prepared roofing. These charts, he said, showed clearly that the con-

tractor was losing sales and money and that they should get away from their shops occasionally—see what is going on—get in personal contact with fellow contractors and learn why they can't get the roofing business back. He explained the TEC

customers will enjoy reading.

"Service of Sheet Steel to the Farmer"—a booklet that should be sent to every farmer—a business getter of the best kind.

"Making Profits"—a booklet which gives ideas to fabricators on how to use their machinery in times when their regular work is slow.

He spoke of the national advertising being done, inquiries from which are being turned over to sheet metal contractors.

Mr. Rogers told of the vocational educational work being done by the Committee, of the pushing of new sheet metal products, tests of soldering, tests of paints for sheet metal, tests of prepared roofing being conducted, creation of new designs of garages, metal ceilings, and the work being done to secure city inspectors of sheet metal work and a dozen other things.

Master Brand sheet developed by the Committee—its higher quality, heavy gauge and superior coating, a sheet designed to give quality service and the contractor better business. Every sheet metal contractor, he said, should have a mailing list, even if it contained only a hundred names. The committee is publishing booklets for free distribution to the public and these booklets are free to be sent to names on such mailing lists.

He explained the value of such lists by stating that the committee itself has such lists, names totaling 85,000 to 90,000—all users of sheet steel.

Mr. Rogers also told of the work being done to establish new building codes in cities where codes now exist which discriminate against sheet steel. He told of regulations in force regarding sheet metal garages and the method being employed by the committee to have such regulations changed.

Mr. Rogers mentioned some of the booklets which are free to all.

"Service of Sheet Steel to the Public"—a booklet that offers suggestions to the public as to the uses of sheet steel—a booklet that your



Chas. N. Louis and Rudy Jobst.

Mr. Rogers said they were receiving hearty coöperation from State Associations and the National Association of Sheet Metal Contractors.

He praised the coöperation of National President W. C. Markle, who was fortunately located in Pittsburgh also.

All of the work, he said, was for the benefit of the industry, and urged the contractors to adopt better business methods to get their

shops on the main street and to clean up their places of business to reflect true standing of their business.

A short discussion followed Mr. Rogers' talk and Mr. Harms took



James Barrett
Re-elected Treasurer

charge. The boys showed much interest and Mr. Rogers answered numerous questions.

Mr. Harms resumed the Question Box. "What is being done on the work of the Trade Development Committee?" was one of the questions.

Mr. Harms as a member proceeded to report on the progress, naming the men in charge of different parts of this extensive work and stating that much was expected in time for presentation at the National Convention next month.

"Will the tin roof ever come back?" was another of the numerous questions.

Mr. Smoeger of Peru said he believed it depended on the individual contractor. He said he simply talks to the prospect and gets plenty of tin roofing business by showing the buyer the extra value to be had in paying for good roofing.

Wednesday evening the members, their wives and guests were guests of the Illinois Travelers' Auxiliary at a Banquet and Entertainment held at the Jefferson Hotel.

Thursday morning's session opened by a report of the Resolutions Committee, rendered by Mr. Harms. He read resolutions rendering thanks to the Peoria Local,

the trade papers, officers of the association and all others who helped make the convention a success.

He also offered a resolution stating the loss of a good member and friend in Henry C. Dehner, who died during the year.

It was moved and adopted that a copy of the resolutions be sent to the family of Mr. Dehner.

Resolutions were also offered on behalf of P. A. Johnson and Rudolph Strenlow, both of whom were absent on account of illness.

Other committees reported to the satisfaction of the members, and the Question Box was resumed.

Space does not permit of the en-



R. J. Jobst
Retiring Secretary

tire proceedings, as the Question Box was full to overflowing and answers much too numerous of complete report. Some of questions and partial answers follow:

"Does the oil burner business mean an increase or decrease in the furnace business?" Mr. Harms said he believed it meant an increase. He cited many reasons for this opinion and said he did not see how it could possibly decrease the furnace business.

"What are you getting out of your Association?" Ralph Poe of Canton said he believed that one got as much out of the Association as he put in.

A suggestion was made that dues were too low, and Mr. Poe said he would be willing to pay \$50 a year for the benefits he received.

"What should be the net profit of

a sheet metal business doing a \$30,000 a year business?"

Numerous answers brought forth the opinion that 25% was about right.

"What is the average expense for overhead for the sheet metal business?"

Answers brought out showed that to figure 40 per cent would be about right with the profit added to that.

Mr. Rogers talked on this question and cited facts which showed that proper cost systems would get better profits for the contractor. Here are a few of the other questions, all answered from the floor:

"What would it not be a good thing to employ intensive salesmanship in selling furnaces?"

"What is the best method of fastening metal ceilings to cement?"

"How is zinc for box gutters?"

"What cities of Illinois have furnace codes?"

"What are the results going to be from direct factory installations of furnaces?"

Thursday afternoon was devoted to election of officers.

G. J. George of Springfield was unanimously elected president.



Julius Gerock
Sergeant-at-Arms

Joseph Pearson of Ottawa was elected by unanimous ballot vice-president.

Fred J. Greaeff of Springfield elected in the same manner secretary.

James Barrett of Alton was re-elected treasurer, on motion made by George Harms.

Board of Directors: William A. Smoege, Ralph W. Poe, Charles N. Louis.

Mr. Jobst at this time rendered his report. He read an interesting report of a group meeting at Atlanta and was so enthusiastic over the results obtained that he succeeded in making group meetings a definite part of the association work. Mr. Barrett read the treasurer's report.

Short talks by the incoming and

outgoing officers followed in close order.

Mr. Louis thanked all the members for the great help they had rendered him and especially praised the work of Mr. Jobst.

Joe Walter, on behalf of Ottawa, invited the Association to hold its next convention there, and this city was selected by unanimous ballot.

Mr. Harms talked about the coming National Convention at Louisville and urged all to attend. He told about the hard work being done to make this convention most successful.

tiful sterling silver pocket "flasks." (No, they were just perfume bottles.)

Thursday morning, at the annual meeting of the Auxiliary, reports showed the treasury in healthy condition, and membership increasing.

It was learned with sincere regret that P. A. Johnson (Pete, as he is



Frank Eynatten
Elected Vice-President

CLOSE to one hundred live, "peppy" salesmen answered the call to the annual meeting of the Traveling Salesmen's Auxiliary of

lowed by three hours of dancing to the tune of one of Peoria's famous jazz orchestras.

Auxiliary President Laffin showed keen foresight when he appointed L. A. Denoyer, Oliver T. Ingledeew and H. R. Harrison as the Entertainment Committee, as the food was good, service splendid, and J. H. Hudson, the speaker of the evening, who for the past twelve years has been secretary of Association of Commerce of Bloomington, kept everybody laughing for almost an hour straight.

George Harms as a toastmaster did himself proud. Unlike the average toastmaster, George did very little talking himself, and limited the few on whom he called to two minutes; in fact, he suggested to these different "celebrities" that all they need do was stand up and show themselves—"little or no words necessary."

It was rather hard on President Charles N. Louis, Secretary Jobst, Treasurer Barrett, the "heavenly twins," Symonds and Gerock, Frank Eynatten, H. S. Rogers and Miss Etta Cohn, but they really managed to keep within the time limit.

To add to the joy of the occasion, the ladies were presented with beau-

affectionately known) has been ill for the past three months. Resolutions were adopted expressing best wishes for his speedy return to perfect health, and a committee was appointed to call personally.

The election of officers went smoothly, as no one dared oppose candidates who were nominated and "seconded" with such glowing tributes, but when it came to the election of sergeant-at-arms, with two such efficient gentlemen as Jules Gerock fighting for re-election and Herb Symonds firmly convinced that it was his bounden duty to succeed his "twin," the campaign speeches were marvels of elegance and eloquence.

After fully a half hour's heated battle, Herb Symonds, while admitting that he still felt he was the logical man for the office, withdrew in favor of Jules, and all was well.



W. P. Laffin
Retiring President

the Sheet Metal Contractors' Association of Illinois, at the Hotel Jefferson, Peoria, Wednesday and Thursday, April 7 and 8.

Wednesday was the big night for the Salesmen, as they were hosts to the Contractors at a banquet fol-

The officers who were chosen to guide the Travelers this year are:

President, H. R. Harrison.
Vice-president, Frank Eyenatten.
Secretary, Etta Cohn.
Treasurer, J. B. Sauer.
Sergeant-at-arms, Jules Gerock, Jr.
Directors: P. M. Lorenz, chairman; William P. Laffin, Ros Strong and Joe Burgess.



J. B. Sauer
Treasurer-Elect

Publicity Committee: Charles H. Bishop, E. A. Hoy and J. F. Johnson.

Ros Strong, president of Michigan Auxiliary, and Lee Gillespie, Ohio Auxiliary president, were among those present, and by no means proved to be "shrinking violets." Both have missed their vocations; Ros, as a stump speaker, and Lee, as a cotillion leader, would shine anywhere and everywhere.

With a rousing cheer and a hearty thank you for retiring President Bill Laffin and his staff, the entertainment committee and all others who helped, the Auxiliary meeting adjourned to meet again in 1927 at Ottawa with the Contractors.

Metal Branch Meeting Will Be Held in Hotel Gibson, Cincinnati

Cincinnati will be the next meeting place of the Metal Branch of the National Hardware Association, according to E. H. Hoffeld, of the

Ferdinand Dieckmann Company, who is chairman of the entertainment committee. The meeting will be held in the Gibson Hotel, May 13 and 14.

The Cincinnati Committee is making every effort to entertain the delegates during the meeting in the old-fashioned manner. Preparations are also being made for the reception and entertainment of any delegates who arrive the day previous to the meeting. An entertainment of high-class variety in every respect is being retained.

In addition to Mr. Hoffeld, Chairman, there are on the committee: A. P. Poyer, of the American Rolling Mill Company; F. A. Moeschel and William Wendell, of the Newport Rolling Mill Company; George McGlaughlin, of the American Sheet & Tin Plate Company.

The meeting will be held at the Hotel Gibson, Cincinnati's newest hotel.

Pennsylvania Sheet Metal Men to Convene at Williamsport, April 14 to 16

Secretary W. F. Angermyer, of the Sheet Metal Contractors' Association of Pennsylvania, calls attention to the coming state convention of that association as follows:

"You are extended a cordial invitation to attend the annual convention of the Sheet Metal Contractors' Association of Pennsylvania, which will convene on the morning of April 14th and continue through the 15th and 16th. Headquarters, Hotel Lycoming, Williamsport, Pennsylvania. Something of interest doing every minute. Splendid entertainment. Am sure you will enjoy a few days' stay at the beautiful Hotel Lycoming.

"Rooms in the Lycoming range in price from \$3.00 to \$5.00 per day, with an additional charge of \$1.50 per day where two people occupy any of the above rooms. Rooms with twin beds and private bath for \$7.00 a day, corner rooms \$8.00 per day. These rooms are large enough for another single bed, which can be added at \$2.00 per day.

"Good roads make Williamsport

easy of access by auto from all parts of the State. It is on the Susquehanna Trail, one of the most beautiful drives in Pennsylvania.

"Come—enjoy a few days with your fellow-craftsmen."

Cook County Sheet Metal Club Holds Meeting in New Hall

A very enthusiastic meeting of the Cook County Sheet Metal Club was held on the evening of April 2. The meeting took place in the new quarters of the club in the Immel Bank Building at Belmont, Elston and California Avenues.

A plan for cooperative advertising was outlined by the sheet metal committee, but the details of this are not yet worked out.

Through the coöperation of the Caspers Tin Plate Company, Chicago, the Cook County Sheet Metal Club has obtained for their next meeting to be held at the Ivar Viking Temple Hall, at Elston and Hamlin Avenues, April 16th, J. P. Eckel, Metallurgical Engineer of the American Sheet and Tin Plate Company, Pittsburgh. Mr. Eckel will talk on the corrosion of steel sheets. Stereopticon slides will be used to illustrate the results of the tests made by the American Society for Testing Materials, which is a non-partisan body of men composed of expert metallurgical engineers.

This April 16th meeting will be an open meeting (not restricted to members)—"everybody welcome"—and it is hoped that a great number will attend.

Milcor Has New Dealers' New Price Book for Distribution

The Milwaukee Corrugating Company, Milwaukee, Wisconsin, has just issued its latest Milcor Dealers' Net Price Book.

It has 108 pages of valuable data and prices of Milcor products which should be in the hands of every dealer.

The book is pocket size, so that it can be carried in the coat pocket at all times as a convenient and handy reference book.

Showing How to Construct a Pattern for Tees Intersecting Flat Surfaces

The Accompanying Illustration Gives Reader Chance to Follow Outline With Ease

By O. W. KOTHE, Principle St. Louis Technical Institute

WHEN meeting with tees that must join to square pipe, either straight joints as at Figure 1, or curved surfaces, as in Figure 2, these intersections should be considered the same as a butt miter. That is the tee butt into the heel of the elbow along the line of the heel which gives the cutting off line. The same thing is true for a straight pipe, as in Figure 1, where the line a-b, the lines from section A. Then the lines in pattern are cut off to correspond with those in elevation.

First draw the side elevation of Figure 1, using a butt line as, a-b, and then draw the angle for tee from a center line—any angle you desire, or any diameter or any length. Next describe the section A and divide in any number of equal parts. From these parts, draw lines parallel to the center line until they intersect the butt line, a-b, as

in points 1'-2'-3'-4', etc.

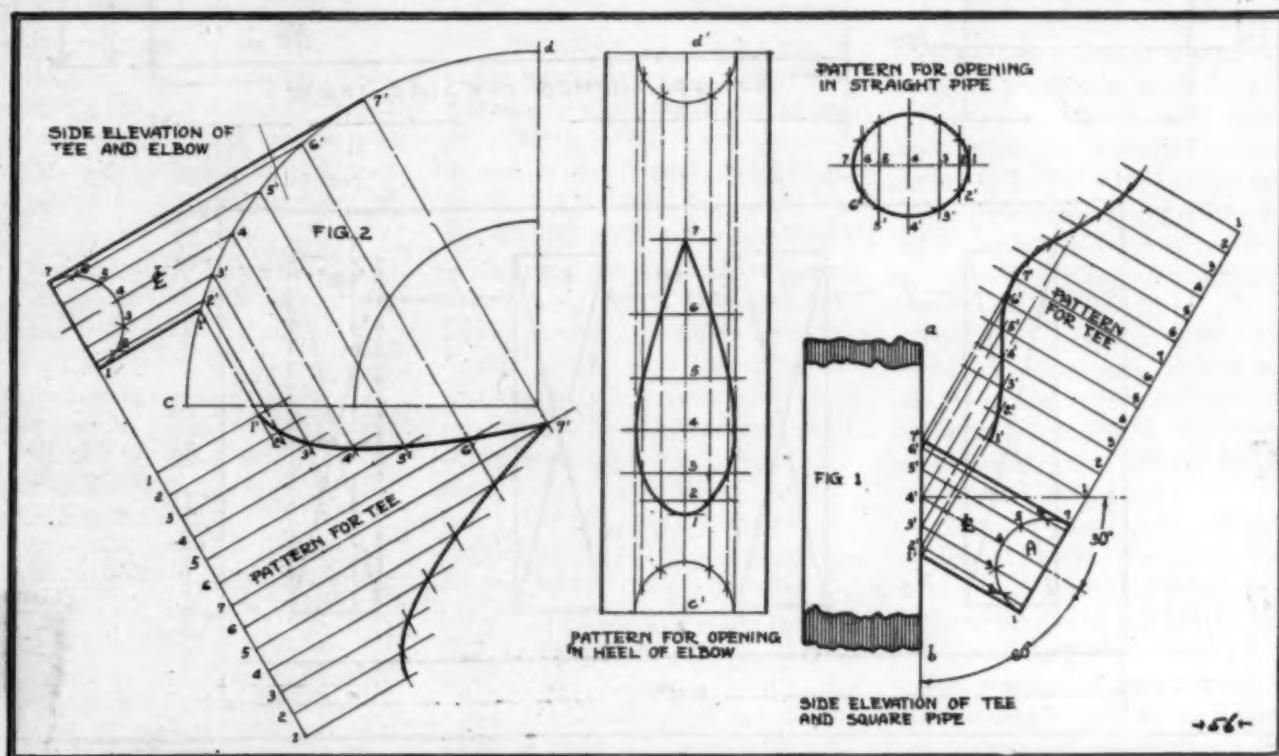
Now pick the stretchout from section A, and step off the girth for pattern as 1-1, and square out stretchout lines, and then bring projectors from line, a-b, of elevation to cut off these lines as in points 1'-2'-3'-4', etc. Or, these lengths can be picked with dividers from elevation and set off in pattern as 1-1'; 2-2', etc.

To lay out the opening where the tee fits against the flat surface; observe the angle of the tee makes the length of 1'-7' of elevation, and so each space is picked as 1'-2'; 2'-3', 3'-4', etc. and this is set as 1-7 in pattern for opening. Now as this gives the length—so the sectional lines in A gives the half diameters. So we pick the sectional lines from A as line 2, and set as 2-2' and 6-6'; next line 3 is taken and set as 3-3' and 5-5', and finally line

4 is taken from A and placed as 4-4'. This allows for tracing the oval shaped opening as shown.

In developing Figure 2, the same procedure is followed; placing the tee on any angle or position desired on the heel of elbow, or in using any diameter for Tee as section B in this case. Observe the lines from section B intersect the heel in points 1'-2'-3', etc. to 7', which gives the positions for cutting off the lines in pattern as shown.

The pattern for the opening in the heel, would be developed by picking the girth for the heel and setting it off as, c'-d', and then pick the points 1'-2'; 2'-3'; 3'-4', etc. to 7' and set this on the line c'-d', as 1-2-3-4-5-6-7, and draw lines through the points, and then by means of dividers step off the half diameters of the sectional lines from B. Or you can reproduce the section B



Patterns for Tees Intersecting Flat Surfaces.

into the positions c'-d' with all its points, and then with a straight edge, draw lines to cross the stretchout

lines 1-2-3-4-5-6-7. This gives the intersections for tracing the outline for opening as shown.

Place laps for all edges extra to correspond with the kind of seam you wish to make.

Cotton Says Liverpool Cap or Stackhead Is Not Difficult to Make

Thinks Kothe's Method Not Practical—Says Combined Area of Slots Need Not Coincide With Stack Area

P. H. COTTON, of the P. H. Cotton Metal Works, 4628 Bienville Avenue, New Orleans, Louisiana, offers a method of making a stretchout pattern of a Liver-

pool Cap. He writes as follows:

To AMERICAN ARTISAN:

I noted with a great deal of interest Mr. O. W. Kothe's method of developing a Liverpool cap, or

stack head. With all due respect to Mr. Kothe as a teacher, I want him to know that I do not think his method practical.

The accompanying drawing shows

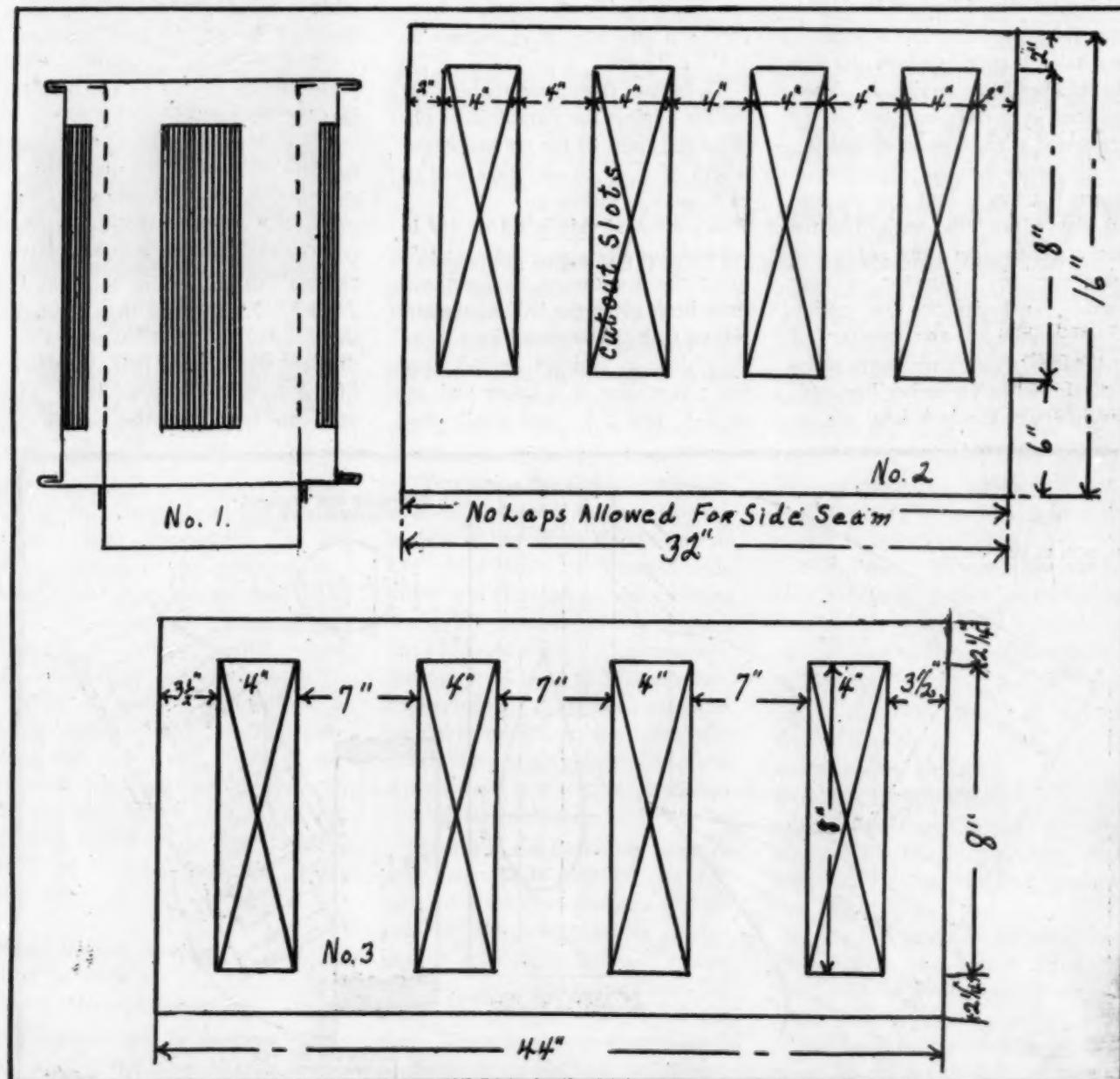


Figure No. 1—Section Showing Assembled Cap. Figure No. 2—Stretchout for Inside Cylinder for 10-inch Liverpool Stack, or Stack Head. Figure No. 3—Stretchout for Outside Cylinder for Outside Cylinder for 10-inch Liverpool Cap, or Stack Head.

the stretchout necessary to make a 10-inch Liverpool cap, which any sheet metal worker should be able to understand, as such a cap is not hard to make.

Referring to the area of the slots, or openings, in the sides of the inside and outside cylinders, I want to say that they do not necessarily have to be equal to the area of the inside cylinder, or pipe; in fact, it makes no difference if the slots are twice the area of the inside cylinder. The whole thing is merely a matter of appearance, proportioned according to the height of the outside cylinder.

In assembling the outside and inside cylinders, their openings must not be in a direct line with each other. They should be opposite each other so that the wind will not be able to blow down the smoke pipe.

The method I am giving here is a practical method. I have made hundreds of these Liverpool caps in various sections of the country for use on sea-going vessels. I have also used a good many on chimneys that were found to have a poor draft, or where the chimney had a down draft. They work wonderfully, regardless of what direction the wind is coming from. When they are used there is no down draft whatever. I find, however, that they work the best when the wind is blowing a gale, as under these circumstances a suction is created having the same action as a blower would have.

I would advise all men who have trouble with smoking chimneys to try one of these Liverpool caps. They have always produced good results for me and I can recommend them to others.

service which you may have if you will but tune in.

Consider that the National Association of Sheet Metal Contractors has Committees working for your benefit. From time to time the reports of their work are broadcast through the sheet metal trade journals.

During the past few years the vocational education committee has developed an apprenticeship training course which was approved at the annual convention at Atlanta last June, and which has since been printed and distributed to members and to schools interested in establishing training classes for apprentices in the sheet metal trade.

The slogan committee has completed the work assigned to it, having selected a slogan and a distinctive design which has since been copyrighted by the National Association in order that it may limit the use of it to members of the Association, and to advertisers of sheet metal products who patronize the sheet metal journals.

The warm air furnace committee has been working in close co-operation with the National Warm Air Heating and Ventilating Association in preparing a code for installing warm air furnaces in accordance with the best principles determined by the research work which is being carried on by the National Warm Air Heating and Ventilating Association at the University of Illinois.

The trade development committee has in hand the preparation of a book covering all branches of sheet metal work in building.

The cornice booklet issued last year is not a complete copy of the cornice section as it will appear in the book but should be considered as specimen pages of the larger work now being prepared.

Other committees which you will find listed in every issue of the *National Sheet Metal Contractor*, have not been quite so active as the ones I have mentioned but they are ready to help you solve your problems if you will submit them to the Chairman of these Committees as you are invited to do, or if you send them to our National Secretary.

What the National Association of Sheet Metal Contractors Is*

What It Costs You Not to Be a Member of This Organization

By W. C. MARKLE, President National Association of Sheet Metal Contractors

I WONDER how many of you are radio fans?

Probably most of you own radio receiving sets, but those of you who do not, certainly have, at one time or another, listened to programs broadcast for the entertainment of the public.

You may ask, "What has our Association to do with the radio craze?" To which I would answer, not a thing in the world, except by way of comparison or illustration.

It may be of interest to you to know that a recent survey of the radio industry disclosed some very important facts.

When we consider that broadcasting was introduced only about five years ago, at which time there were only about 500 receiving sets on record in this country, most of these owned by men who were us-

ing them as a scientific hobby, then with the advent of broadcasting a public demand for receiving sets was created which is amazing, as approximately 5,000,000 sets are now in use in the United States, and nearly \$15,000,000 was spent on broadcasting programs during 1925.

The programs are, as you know, made up of music (classical and jazz), lectures, sermons, weather reports, market quotations and news features, in fact you can tune in on programs to satisfy your own particular wishes, whether it be for entertainment or instruction, without cost. Do not, however, overlook the fact that if you have a receiving set you have invested something in the radio industry for which you expect to get value by way of entertainment.

Let us consider that the sheet metal industry has gone into the broadcasting business, that there are a number of stations giving a

*Address delivered at Richmond, Virginia, at the Carolinas-Virginia Sheet Metal Contractors' convention.

Another station broadcasting for your particular benefit is the Sheet Steel Trade Extension Committee, which is rendering a real service to the sheet steel manufacturers, the sheet metal contractors and the sheet metal using public.

They have been doing research work to determine the best grades of sheet steel to be used for particular purposes and to determine new uses for sheet steel. They are publishing their findings in booklets or bulletins which are sent to all sheet metal contractors on their mailing list. Is your name on this list? If not, be sure to have it placed there.

They are broadcasting to the sheet steel using public through the best advertising mediums throughout the country, monthly magazines, architects' magazines, sheet metal and other trade journals and newspapers.

The National Warm Air Heating and Ventilating Association is broadcasting its findings in the research work that is being done for them by the University of Illinois under the personal directions of Prof. Willard, and an extensive advertising campaign has been adopted which will forcibly present to the public the advantages of the warm air furnace over other types of heating systems and in which they will combat the false claims made for other systems in the matter of cost of installation and efficiency.

The Copper and Brass Research Corporation has been conducting tests to determine the particular uses for which copper and brass are best adapted and they are broadcasting the results of their research work for your benefit.

Your Tri-State Association is broadcasting and, I believe, if a copy of the proceedings of this convention could be placed in the hands of every sheet metal contractor operating within your jurisdiction who is not now a member, you would have a large increase in members by the time your next convention will be held.

Your trade journals are broadcasting in every issue that leaves the press.

They appeal to you to help raise the standard of the industry; to apply modern business methods to your business, so you may earn the respect of the community in which you operate, and as you do so you will be assured the consideration and respect you deserve as a business man.

With all these stations broadcasting are you tuning in? Are you getting any benefit from the work that is being done for you by others?

If you are not it is your loss. You should tune in and take full advantage of what is offered you.

If you invested in a radio receiving set you are using it to get your money's worth.

If you join a sheet metal contractors' association use it to get your money's worth.

If you use your radio you must give up some of your time to listen in on the program provided for your entertainment.

If you will make full use of your Association membership it will also be necessary to give up some of your time to attend your Association meetings and your state conventions in order that you may have full benefit of the programs presented (broadcast) for your entertainment, education and inspiration.

"Tune in" on the activities of the National Association of Sheet Metal Contractors if you expect to derive any benefit from the work that is being done by its committees.

"Tune in" on the activities of the National Warm Air Heating and Ventilating Association if you want to give your customers the best warm air furnace heating systems, installed in accordance with the standard code.

"Tune in" on the activities of the Sheet Steel Trade Extension Committee if you want to share in the benefits to be derived from their advertising campaign which has already resulted in creating a greater demand for sheet steel products.

"Tune in" on the sheet metal trade journals if you want to be fully informed on all the new developments in your industry.

All of the interests I have mentioned are co-operating very closely in an effort to help you make your business bigger and better.

As you make use of this service offered you and as you co-operate with the members of your Association you will help make your Association an active one.

If your Association is not active it has no practical value, in fact it is more likely to be a liability than an asset. The only way to put activity into your Association is for every one of you to do your share of the work.

The Association needs more than your money it needs you.

This Association has problems to solve. Get together, solve your problems. The solution will not just happen. You must think and plan, then act in co-operation to obtain the benefits for your members which they are entitled to. Through properly organized endeavor you can get results which could not be obtained through the efforts of individuals or small groups.

The individual can no longer function alone.

You expect your Association to make a certain amount of progress each year, to keep you informed as to new developments in the sheet metal industry, improvements in the quality of sheet metal, developments in labor-saving devices, new processes of manufacture, better methods of conducting your business, in fact, everything which will help elevate your business to a higher plane.

Who is going to do all this for your Association, for you? Will you help?

Every sheet metal contractor within your jurisdiction who is not now a member is getting direct benefits from the activities of your Association.

You cannot expect to improve conditions for yourselves without helping the other fellow.

They owe much to your Association which is building up a better and a bigger industry.

The Sheet Metal Contractors Association needs you.

Missouri Sheet Metal Men Hold "Peppy" Meeting at Springfield

Outing to Powersite an Added Feature of This Year's Convention

By GEORGE J. DUERR

THE circuit of sheet metal contractors' conventions is almost completed. With the termination of that of the Missouri Sheet Metal Contractors' Association in Springfield, Missouri, Monday and Tuesday of this week, and that of the Illinois Sheet Metal Contractors' Association at Peoria, Illinois, Wednesday and Thursday of this

dress of welcome which was delivered by City Attorney Dan M. Nee, in which he assured each and every member that the keys of the city were in their possession. The response was made by William Koelsch, President of the Missouri Sheet Metal Contractors' Association.

The reports of the officers which followed the address of President Koelsch revealed the fact that the Missouri organization is holding its own in proportion to its size as compared to the other associations.

E. B. Langenberg, President of the National Warm Air Heating and Ventilating Association, who is a member of the Missouri organization, spoke to the delegates on the relation existing between the new Standard Furnace Code and warm air heating in general. Mr. Langenberg's address is published in full on another page of this issue.

The report of L. W. Millis was the only other address made during the morning. His report in part follows:

Report of L. W. Millis

It may be in order for your representative to the Technical Meeting of the National Warm Air Heating & Ventilating Association held at the University of Illinois in Urbana, to preface his report with a mention of the thing that has impressed him most since your meeting in St. Louis last April. That is: The necessity for research work in this line of endeavor.

Much research work is done in universities in the line of scientific investigations. Such work is usually scientific, pure and simple. Often times the results lie dormant for years awaiting application. Such work does not usually bring the investigator much, if any, immediate returns in either money or reputation. Dr. Ohm's research is perpet-

uated by the use of his name to indicate the resistance of materials to the flow of electricity. Ampere's name is used to measure the quantity of current flowing. Volts fared somewhat better so far as fame is concerned. We speak of volts to indicate the pressure of the juice in an electric current. Besides that, his name is on every tongue as a



William Koelsch
Retiring President

week, the spokes of the wheel of this progressive review, which began in February, are almost all in place for the year of 1926. There remain but Pennsylvania, New York and Texas and last, but not by any means the least, the National convention at Louisville in May.

The Missouri state convention of sheet metal contractors and furnace dealers came to order promptly as scheduled in the Colonel Hotel, Springfield, Monday morning, April 5. The convention was called to order by H. R. Naber, Chairman of the arrangements committee. Over 200 delegates and their wives were in attendance.

Mayor Freeman of Springfield was unable to attend a spirited ad-



H. J. Morrison
Retiring Vice-President

measure of the negative quantity of juice measured by the Vol-Stead act.

In these days of organization, duplication of research work is often avoided and a wise policy of enlightened selfishness has brought about research work designed not alone for the future, but also for present day application. Farmers have Bureaus studying soil, fruit, livestock, poultry, etc., and the results are available to every farmer who does not keep his nose so close to the grindstone that he thinks the world is composed of just himself and the grindstone and his "durned" old nose. There may be a few industries that can run along successfully with little study of those



Group of Missouri Sheet Metal Contractors in Convention at Springfield, Missouri, This Week.

things that make for universal accuracy, but the warm air industry is not one of them.

Professor Willard of the University of Illinois told us at the Urbana meeting that Professor Andrews saw the unscientific manner in which warm air furnaces were installed and fostered a movement toward research work along that line. Bear in mind these two facts:

Research work by a manufacturing company or by an industry is lopsided and purely commercial and its statements are always subject to suspicion.

Research work by educational institutions are regarded as academic only and have no value until some practical man has only a partial conception of the principle involved.

A few men in the furnace industry were big enough to see possibilities in investigations made by scientific men of the highest attainments, men who had infinite patience and above all unquestionable integrity. They had in mind that the work must be done in such manner and in such sequence that it could be easily made available for everyday use. The National Warm Air Heating and Ventilating Association, therefore, assess themselves large sums of money every year to help the research department of the University of Illinois to give them accurate information concerning the multitude of details connected with the technical side of the industry.

I can not speak too highly of Professors Willard, Kratz and Day of the University of Illinois, not only as investigators, but as manly men.

On the other side of this research, or work of investigation, are the men who are directly interested, financially, in the manufacture of furnaces or some of the appliances used in conjunction with furnaces.

We are so accustomed to selfishness and concealment in business that we might be justified in expecting that the National Warm Air Heating & Ventilating Association would not contemplate giving away information that cost them so much in both time and money—can you point to an industry that would? But that is exactly what they do. They can not afford, even if possible, to publish the vast mass of detailed progressive findings, but they actually do the next best thing. They invite organizations, such as the Missouri State Sheet Metal Contractors' Association, to send a man to participate in the Technical Meeting at Urbana, Illinois, every December and carry away for your own use, but not for publication, all information you can get. Such generosity illustrates the high plane on which the Warm Air Furnace Industry rests. You all know their President, E. B. Langenberg—you know his worth. To a man they chose Mr. Langenberg to succeed himself as President. He is one of your members and the Missouri State Sheet

Metal Contractors' Association should feel "puffed up."

What I especially want to impress on you is the importance of research of every kind, especially in your own line. The more you personally comprehend it the more you appreciate the possibilities of your own occupation and the more zest you will have in following it. The industries of the world are struggling for a place "in the sun." Advanced knowledge can not be picked up in a moment when the demand comes. It must be acquired gradually, day by day, just as all your other knowledge and skill has been acquired.

You, of course, know that a vast amount of research work had been done in the laboratory at Urbana. Before anyone might say that it was entirely applicable to practical work, it was necessary to prove it. The heating plant installed in the research residence in Urbana is not intended to be an ideal heating plant. It is intended, first of all, to prove, or disprove, the value of previous work in the laboratory. The installation very closely duplicates the laboratory equipment. It must be very gratifying to all who have been responsible for the work to find that the results obtained justified their expectations. In the laboratory it would not have been easy to get accurate data on the difference in temperature ranging from floor to ceiling, effect of wind, value of humidity and quality of various

kinds of chimneys. Naturally the work must progress slowly; the work must be done accurately and repeated under many different conditions in order to be applicable to all the conditions we meet in our daily work. I suggest that as fast as the University of Illinois issues bulletins covering its investigations, that you study them.

Immediately after luncheon, H. S. Rogers, of the Sheet Steel Trade Extension Committee, Pittsburgh, was given an opportunity to tell the delegates what the Sheet Steel Trade Extension Committee is and what progress it has made since its inception. In enumerating the purposes for the formation of the committee, Mr. Rogers epitomized them under three main definite heads; namely, to regain lost markets for sheet metal; to create new markets for sheet steel products; to create new sheet steel products for the already existing potential markets. These three heads were enlarged upon in a way that showed his audience that the Sheet Steel Trade Extension Committee is placing its vast resources at the disposal of those men who make up the sheet metal fraternity. He told of the Master Brand sheet which is being produced and which will absolutely insure the gauge of the materials used. Many other ways in which the committee is now helping to increase business for the sheet metal contractor were enumerated by Mr. Rogers.

Edwin A. Scott was scheduled to speak immediately after Mr. Rogers. Mr. Scott was unable to be present at the meeting, but sent an address on "Buying and Selling," which was read before the delegates. In this address Mr. Scott emphasized the fact that the buying end of a sheet metal business is equally as important as the selling end. He brought out the fact that to go bargain hunting in the sheet metal business for raw materials almost always proved fatal. The practice is fraught with uncertainties and surprises that can never be anticipated nor encompassed. To buy and install an inferior grade of material in anticipation of a call for repairs two or

three years hence is not only unethical, but bad business practice, in the opinion of Mr. Scott. He likened a sheet metal contractor to an orange dealer and asked how long the orange dealer would remain in business if he were to hand out an inferior grade of oranges so that the customer would the sooner have to come back for more. The point went over good.

Considerable discussion on liability insurance and methods of saving money on all forms of insurance offered by the hardware insurance companies was also had.

The election of officers followed.

The banquet and entertainment was held in the hotel in the evening and enjoyed by all who participated in it.

During the Monday afternoon session Joseph V. Smith, of the Smith Heating Company, was elected president of the state organization. Other officers named were: H. R. Naber, Springfield, first vice president; William H. Otten, St. Louis, second vice president; Ben Kohlbenschlag, St. Louis, re-elected secretary; F. T. Bokern, St. Louis, treasurer, and L. H. Dorn, Joplin, sergeant-at-arms.

Delegates to the national convention of the association, which will be held in Louisville, Kentucky, on May 24-28, include J. B. Fehlig of Kansas City, Clyde Raymond of Springfield, with alternates being E. B. Langenberg of St. Louis and Alex Hall of St. Louis.

The seventh annual convention of the Missouri Sheet Metal Contractors and Furnace Dealers will be held at Sedalia, according to a decision reached during the business session.

On the Ladies' Committee were Mrs. Clyde Raymond, Mrs. J. V. Smith, Mrs. T. F. Reynolds, Mrs. W. H. Kirby, Mrs. D. P. Bass, Mrs. H. R. Naber, Mrs. William Welhener, Mrs. Henry Welhener, Mrs. Randolph Hoffman, Mrs. O. Woodruff, Mrs. J. D. McMahon. Music for the entertainment was furnished by Miss Loriene Welhener.

The entire day of Tuesday was

spent on an outing. The train left the Missouri Pacific depot for Shepherd of the Hills country at 8:30 a. m. and arrived at Branson at 11, where the delegates boarded an excursion boat on the White River for a trip up the river. Luncheon was had at the Rockaway Beach Hotel. After luncheon the trip on the excursion boat was continued to Powersite for sightseeing. The trip was thoroughly enjoyed by all who took it.



Gasoline Burner for Corn Popper.

From J. L. Willey, Des Moines, Iowa.

I should like to know who makes a gasoline burner, tank, pump, etc., for use in constructing corn popper.

Ans.—Coleman Lamp Company, Wichita, Kansas.

Nickel Silver Sheets

From O. M. Risher, 237 West High Street, Springfield, Ohio.

Please advise me where I can buy nickel silver sheets for bar and soda fountain work.

Ans.—American Brass Company, 111 West Washington Street, and Merchant and Evans Company, 347 North Sheldon Street; both of Chicago, Illinois.

Address of Double Blast Manufacturing Company

From Gus Wichtrich, Box 236, Willcox, Arizona.

Can you tell me where the Double Blast Manufacturing Company is located?

Ans.—North Chicago, Illinois.

Anti-Freezing Fire Extinguishers.

From F. D. Woodford, Philippi, West Virginia.

Who makes anti-freezing fire extinguishers. They are a tin tube about 1½ inches by 14 inches, filled with dry chemical.

Ans.—The Geo. W. Diener Manufacturing Company, 400 Monticello Avenue, Chicago, Illinois.

Revolving Nail Bin.

From E. P. Babcock, Main Street, Anoka, Minnesota.

Please advise me who makes a revolving nail bin.

Ans.—Wellston Manufacturing Company, Wellston, Ohio.

Random Notes and Sketches

By Sidney Arnold

"The essence of humor is sensibility; warm, tender fellow-feeling with all forms of existence."—Carlyle.

Lee W. Gillespie, of David Lupton Sons, who is also president of the Ohio Auxiliary, came in to see me this week. He was on his way to the Illinois Sheet Metal Contractors' convention at Peoria, Illinois.

* * *

V. L. Roland, of Roland & Miller, Elkhart, Indiana, does considerable traveling. One day while enroute from Detroit, Mr. Roland saw a dear li'l pink baby on the train. He evinced much interest in it and stopped to peek-a-boo at it. "A fine youngster," said he to the young mother. "I hope you will bring him up to be an upright and conscientious man."

"Yes," smiled the fond mother, "but I'm afraid it is going to be a bit difficult, as—"

"Oh, nonsense," continued Mr. Roland; "as the twig is bent so is the tree inclined."

"I know it," agreed the mother; "but this twig is bent on being a girl, and we are inclined to let it go at that."

* * *

Before Dave Farquhar, of the Kansas City branch of Tuttle & Bailey, had acquired for himself a partner for life's journey, he happened to meet the new minister of the village who was very anxious to interest Dave in the church.

"Good evening," said the minister. "Do you ever attend a place of worship?"

"Yes, indeed, sir, every Sunday night," replied Dave with a smile. "I'm on my way to see her now." Dave worships more than ever now, but he's got her in his own home now.

* * *

G. W. Johanson, Grand Rapids, Michigan, who takes care of the Meyer Furnace Company interests in that locality, took down the receiver of his telephone and discovered the line to be busy. "I just put

on a pan of beans for dinner," said one woman to another. G. W. hung up dutifully and waited. After three successive trials at reasonable intervals, G. W. saw that strategy was necessary. After a moment's thought he shouted in a trial at a feminine voice: "Oh, Madam, your beans are burning!" A horrified scream greeted the remark, followed by a hasty click of the receiver.

* * *

H. E. Robinson, of the Robinson Furnace Company, Chicago, knows an excellent cure for the nocturnal exercise of the vocal chords. It all happened this way: One day not long ago H. E. was returning from a trip. Seated just ahead of him in the day coach were two women. One apparently had just been married and the other was pretty well along past middle age. "Huh! I'd stop George Little from snoring if he were my husband," the elder woman said. "I'd do as I do with my husband when he begins a midnight concert. I let out and give him a good strong one in the ribs! That generally works. But when it doesn't, I follow it up with a nice gentle one and tumble him out on the floor. It isn't a cure, Mrs. Little, but believe me, it works."

* * *

I have just learned that E. C. Carter of Furnaces & Sheet Metals is a proud and happy papa. The new arrival is a boy, which makes E. C. all the happier. My most hearty congratulations are extended to both Mr. and Mrs. Carter.

* * *

Charlie and Rudy, the Potash and Perlmutter of the sheet metal business, otherwise known as Charles N. Louis and Rudolph Jobst of Peoria, entertained and were entertained by Oliver Ingledew, L. A. Denoyer, George Harms and some of the other boys at a special "skull practice" session after the closing ses-

sion of the Illinois Sheet Metal Contractors' Convention held at Peoria.

Carl Jobst, brother of the well-known "Rudy," was responsible for much of the fun at this session. He told a story about a red horse that had a great kick to it.

The boys laughed so loud before the tail end of the red horse story was reached that I missed the point of the story. It had something to do with running, however, and that's what caused the outbreak of laughter as Charlie Louis had just finished running with a losing field in the Peoria election the day before.

* * *

One smile I like very much and that all the boys know well was missing from the jolly groups that gathered in the lobby and convention hall of the Jefferson Hotel at Peoria during the Illinois Sheet Metal Contractors' Convention held this week.

That smile belongs to P. A. "Pete" Johnson and his absence is caused by illness, which has kept him at home for some time.

The boys tell me he is getting on rapidly now and will be back in the fold soon. We all missed "Pete" very much.

* * *

Some Words of Wisdom

It is not the critic who counts, nor the man who points out how the strong man stumbles, or where the doer of deeds could have done better. The credit belongs to the man who is actually in the arena; whose face is marred by dust and sweat; who strives valiantly; who errs and may fail again and again because there is no effort without error or shortcoming, but who does actually strive to do the deeds; who does know the great enthusiasm, the great devotion; who spends himself in a worthy cause; who, at the best, knows in the end the triumph of high achievement and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who know neither victory nor defeat.

—Theodore Roosevelt.

The Editor's Page

Minneapolis Accepts Standard Code

ON ANOTHER page of this issue there appears an account of the passage by the Minneapolis City Council of a revised building code. This document embodies the Standard Furnace Code, with some modifications found necessary because of climatic severity in the northern section of the country.

The passage of this code by Minneapolis is significant of three things.

First and foremost, that the Code for residence heating is fundamental and has the unqualified backing of the furnace manufacturers in every section of the country.

Secondly, that the Code is sufficiently flexible to allow of its being applied to residence heating work regardless of locality or of temperature severity. The heat losses known, we can easily provide for the acceleration of the combustion rate of our furnace, so as to make good the heat losses. These heat losses the Code aids us to approximate with a degree of accuracy that has never before been possible. Why should we not desire to investigate and anxiously embrace the known and tested in lieu of the unknown and unreliable methods?

Thirdly, the passage of the Code in Minneapolis is a big sales help for the dealers in that locality. They have now something definite to point. The Code has been published so that Mr. home owner who runs may read. Such a condition cannot fail to reduce sales resistance. It will do more: it will establish confidence in the industry; it will add prestige to the furnace dealers individual business; it will arouse the curiosity of the home owner, thus doing the very thing which the dealer has desired to do all along.

Every alert furnace dealer within the radius reached by the newspaper in which the Code was published will do well to revise his advertising so as to tie it up to the publicity already given the industry.

Furnace men's clubs, and associations in many parts of the country have already accomplished what Minneapolis has just done—Columbus, Omaha, Indianapolis, to mention just a few.

Many other cities have similar action under consideration. Peoria, Illinois, at the present time is about ready to go on record in this direction.

It is human nature to wait and see what the other fellow does. But the Standard Furnace Code is the child of such pedigreed parents; its precepts are so unqualifiedly fundamental that its good influence on the industry cannot fail to be permanent. From now on the job of putting the Code over is one of introduction. No salesmanship is necessary. The Code method of installation sells itself. Take advantage of this golden opportunity to be of service while at the same time you increase your profits.

It's as Easy to Aim High

THERE has never been a time, in the opinion of men grown old and wise in the ways of the world, when the opportunity for success was greater than it is today. The thing that keeps many of us from achieving an unqualified success is not lack of ambition, nor lack of purpose, but rather the tendency to be satisfied with far less than the success we are entitled to under the most ordinary circumstances.

Aim high. Have the courage to see yourself many steps ahead of where you are now. Don't be satisfied with little rewards. Carve out a large goal for yourself, and go after it. There's no disgrace in falling a little short. You will be a better man for having tried than you were before.

The man who can keep before him a picture of what he wants to be is transformed from a ten horsepower man to a hundred horsepower man. It's hard to stop a man who knows where he is going, and has his foot on the accelerator.

If we in the warm air heating or sheet metal contracting business would bear these words in mind and try to visualize what we are attempting to do and its relation to the whole, we would accomplish a great deal more than we do now. It requires good, honest study to accomplish our aim.

How are we going to know what is the best sheet metal roof if we have no ideals to guide us? We must have ideals of perfection in our work as well as in the conduct of our own personal lines. The thought in Emerson's mind when he said: "Hitch your wagon to a star" is so extremely modern and forceful that we take it as the epitome of this editorial. Read it and memorize it.

Grinding the Valves for Spring Business

SPRING is here. The sheet metal contractor is faced with one of the brightest outlooks for a prosperous season that he has ever seen. The question with them is not one of getting the business, but rather it is one of being able to handle it speedily and efficiently, with the least possible friction.

The success which each sheet metal contractor will experience will depend entirely upon the state of his organization and his equipment. The successful contractors know when it is time to discard an old machine and replace it with a new; they know when to discard the obsolete methods in favor of the more modern. Take stock of your shop without delay and determine whether your methods are not too expensive for the modern age. You may be surprised at your discovery and will be glad you did.

Illustrating Application of Standard Furnace Code to First Floor Rooms

No Difficulty Experienced Where All Data Are Available With Which to Work

By GEORGE J. DUERR

THE advent of the Standard Furnace Code in the warm air furnace industry has brought about the long dreamed of and so fervently sought change from the hap-hazard, fortune-tempting methods of installation to those based upon the actual needs in each particular case. Furnace installers of the better class are taking up the work of putting the Code into practice as rapidly as they are able to assimilate its precepts—as rapidly as they can readjust matters to meet the new demands.

But willing as these men are to take up the new and accurate way, many of them have not yet reached the stage where they are sure that they have a secure grasp on the fundamentals of the Code. For instance, a letter from Harold J. Alston, East Liverpool, Ohio, asks the Editor of AMERICAN ARTISAN to check the accuracy of a certain furnace installation. He points out that he is using the Code in his work, but he does not know whether he has the correct interpretation or understanding of the Code definitely in mind.

Therefore, in order to assist Mr. Alston and any other furnace installers who may be having similar doubts or difficulties, the Editor makes the following application of the Standard Furnace Code to the first floor of a 6-room bungalow. Before we delve into the subject, however, a few preliminary remarks and an explanation of terms will add to the clarity.

The letters E. A. G. appearing on the diagram which accompanies this article are an abbreviation for "exposed glass area." The letters E. N. W. S. are an abbreviation of "exposed net wall surface." The location of the cold air returns, as shown on the diagram, is plausible,

but tentative; it would be practically impossible to declare an absolutely definite location for either the cold air returns or the warm air ducts without actually seeing the conditions that obtain in the house. Each installer's own experience and intelligence will guide him aright. It is understood in this case that the attic of the house is tightly floored, so that no extra allowances will have

In this article the editor, in complying with a request from one of our subscribers, has applied the Standard Furnace Code to a six-room bungalow. The diagram shows the floor plan and the location of the warm air registers. A tentative cold air return arrangement is also given, together with probable sizes of the cold air returns. Any other installers who may be having difficulty in understanding the Code should send in the details of the job and the editor will assist in making the application.

to be made to compensate for heat losses of a cold ceiling.

Beginning with the Living Room, we will first seek to obtain the total E. G. A. The full casement measurements of one window on the west and one window and a door (computed the same as exposed glass) on the north give us a total E. G. A. of 76.5 square feet.

The next requirement is the N. E. W. S. The dimensions of the room are given as 12x13 feet, with a 10-foot ceiling. Multiplying, $10 \times 12 = 120$; $10 \times 13 = 130$. The total exposed wall surface equals 250 square feet. The E. G. A. is 76.5 square feet. Therefore, 76.5 sub-

tracted from 250 equals a N. E. W. S. of 173.5 square feet.

The next objective is the cubic contents of the room. This figure is obtained by multiplying the length by the width by the height, which in this case equals 1,560 cubic feet. It should be mentioned that the cubic content and the net exposed wall surface is actually greater in this room than we have computed it to be. Unfortunately no figures were available on the dimensions of the space which juts out on the west side and we were forced to ignore this space for that reason.

We have now all the information we need for that room and are ready to apply Article 3 of the Standard Furnace Code. This article tells us to proceed as follows:

Divide square feet of E. G. A. by 12.

$$76.5 \div 12 = 6.37.$$

Divide square feet of N. E. W. S. by 60.

$$173.5 \div 60 = 2.89.$$

Divide cubic contents by 800.

$$1560 \div 800 = 1.95.$$

Add together the above and multiply by 9 for first floor rooms.

$$6.37 + 2.89 + 1.95 = 11.21.$$

$$9 \times 11.21 = 100.89.$$

This figure equals area in square inches of the basement pipe. But it so happens that in this particular case we have a northwest exposure. Therefore, note No. 6 of the Code applies here and we add 15 per cent to the square inch area of the basement pipe obtained above, which is 15.13, making the total area of the warm air basement pipe for the living room of 116.02 square inches.

Referring to a table of pipe sizes, we find in the column headed, "Area in square inches," that our figure falls between 113, which calls for a 12-inch pipe, and 154, designating a 14-inch pipe. Conforming to advice

of good authority, we take the larger size, or a 14-inch pipe for the living room. And since it is desired to have all warm air ducts run as straight as possible, while at the same time keeping them as short as possible, we place the duct for the living room in the position shown on the diagram.

The northeast bed room is next. The E. G. A. of this room is found to be 19.5 square feet. The N. E. W. S. equals 180.5 square feet. The cubic contents amount to 1040.

$$\begin{aligned} 19.5 \div 12 &= 1.62. \\ 180.5 \div 60 &= 3.00. \\ 1040.0 \div 800 &= 1.30. \end{aligned} \left. \begin{aligned} & X9 = 53.28. \\ & \end{aligned} \right\}$$

$$\text{Total} \dots 5.92 \times 9 = 53.28 \text{ Square inches.}$$

A northeast exposure also calls for a 15 per cent addition to the warm air pipe area, making a total area for the northeast bed room warm air pipe of 61.27 square inches, or a 10-inch pipe.

In the east bed room the E. G. A. is 19.5 square feet. The N. E. W. S. amounts to 110.5 square feet. The cubic content of this room is

the same as that of the northeast bed room, or 1040.

$$\begin{aligned} 19.5 \div 12 &= 1.62. \\ 110.5 \div 60 &= 1.84. \\ 1040.0 \div 800 &= 1.30. \end{aligned} \left. \begin{aligned} & X9 = 42.84. \\ & \end{aligned} \right\}$$

$$\text{Total} \dots 4.76 \times 9 = 42.84.$$

This square inch area, according to the catalog used, is equivalent to an 8-inch pipe.

The E. G. A. in the dining room amounts to 44 square feet. The N. E. W. S. here equals 146 square feet. The cubic content is 1560.

$$\begin{aligned} 44.0 \div 12 &= 3.66. \\ 146.0 \div 60 &= 2.43. \\ 1560.0 \div 800 &= 1.95. \end{aligned} \left. \begin{aligned} & X9 = 72.36. \\ & \end{aligned} \right\}$$

$$\text{Total} \dots 8.04 \times 9 = 72.36.$$

The square inch area of 72.36 is equivalent to a 10-inch pipe.

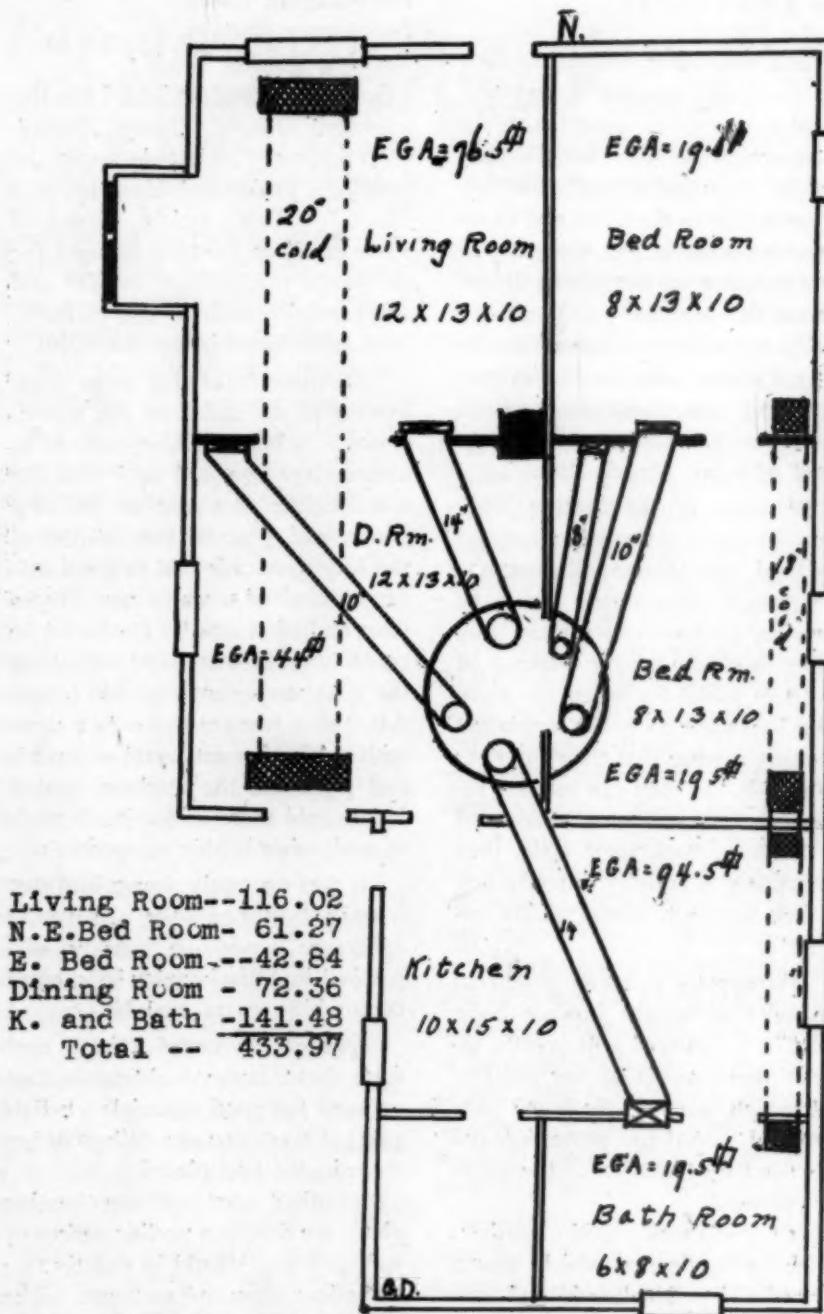
There still remain the kitchen and bath room to provide for. For purposes of simplicity it is deemed advisable by the writer to heat these two rooms with one duct. Since we are using only one pipe for the two rooms, we will figure its size jointly by adding the E. G. A., the N. E. W. S. and the cubic content of the two rooms and then applying the factor. The E. G. A. is 114.0. The N. E. W. S. is 226.0. The combined cubic content is 1500 plus 480 = 1980.

$$\begin{aligned} 114.0 \div 12 &= 9.50. \\ 226.0 \div 60 &= 3.76. \\ 1980.0 \div 800 &= 2.46. \end{aligned} \left. \begin{aligned} & X9 = 141.48. \\ & \end{aligned} \right\}$$

$$\text{Total} \dots 15.72 \times 9 = 141.48.$$

Referring to our catalog table, we find that 141.48 square inches is, according to our way of figuring, the equivalent to a 14-inch pipe.

Thus far we have determined the amount of square inch capacity each pipe must have to heat the house to 70 degrees when the outside temperature is at zero degrees, with a register temperature of 175. To determine the size of the furnace we need only add the square inch capacity of all the pipes and put in a furnace large enough to deliver that amount of heat. If the specifications had called for 70 degrees when the outside temperature is down to 10 degrees below zero, note No. 10 of the



First Floor Rooms of 6-Room Bungalow Heated According to Standard Furnace Code.

Standard Code tells us to add 10 per cent to the capacity of each pipe after all other requirements have been satisfied.

As a tentative cold air return arrangement, the writer, mindful that some air must be taken from each room, advocates one 20-inch and one

18-inch cold air with registers located approximately as shown on the diagram.

It was thought that a more even distribution of heat would be obtained by taking the warm air ducts from the top of the bonnet rather than from the sides.

rate code. This was voted on and passed by the City Council at a subsequent meeting.

As mentioned by Mr. Sedgwick, the ordinance was published in the Minneapolis DAILY STAR under date of March 29, 1926, and is in the office of AMERICAN ARTISAN.

Thus we observe the Standard and Furnace Code softly, silently but surely falling, like a protective blanket, over the entire field of the building industry.

Minneapolis Latest City to Embody Standard Code in Revised Ordinance

Code Falls Like Protecting Blanket Over Entire Building Industry

PROOF that the stalwart legions of the Standard Furnace Code of the warm air heating industry are marching steadily onward to victory in the United States is had in the fact Minneapolis has recently revised its city building ordinance to include the fundamentals of the Code. The ordinance was passed by the city council at a recent meeting.

In commenting on the passage of this ordinance, F. G. Sedgwick, Vice-President of the Waterman-Waterbury Company, said:

"The Minneapolis Warm Air Furnace Ordinance is based strictly on the provisions of the Standard Furnace Code, with such alterations as were made necessary by the more vigorous climate of Minneapolis, and by the restrictions of the Minneapolis Building Code.

"Serious work was first begun on the ordinance in June of 1925, when the Twin City Warm Air Furnace Dealers' Association was organized with this principal initial proposition in view.

"After several meetings, the Code was put into shape and a committee was appointed to secure its passage.

"This committee thought it best to present the copy through the Minneapolis Civic and Commerce Association, which association appointed a committee consisting of an architect, a member of the Builders Exchange, a fire insurance representative, a member of the building inspector's office and three members selected from the heating trade in the city.

"This committee drafted the code into its final form and it was presented to the City Council with the recommendation of the Furnace Dealers' Association, with the recommendation of the Civic and Commerce Association and with the recommendation of the University of Minnesota.

"There was no opposition developed to the code prior to its passage and it was unanimously passed by the council and was first published Monday, March 29th.

"To those of the heating trade who desire to put through a code of this kind, the Minneapolis committee strongly recommend that it be placed in the hands of a civic body rather than rely on the backing of the trade itself, for when the trade alone backs the code, the legislators naturally assume that their interests are selfish. If they can interest responsible business men outside of the trade to back their code, then the attitude is entirely different and passage is much more readily secured.

"Minneapolis is really proud of her new warm air furnace code, which it is believed will greatly increase the comfort of her citizens, and which will, at the same time save fuel, afford fire protection and improve the reputation of the warm air furnace."

Mr. Sedgwick said further: "The fee ordinance which was a part of the original code and provides a fee of \$2 per furnace for permits, was, at the request of our building inspector, put into a sepa-

Encouraging Local Newspaper Editors in Backing Quality Work

In the building section of the Effingham, Illinois, *Daily Record*, there appeared an article under the heading "Leaks and How to Stop Them." This article contained some excellent food for thought for the warm air furnace installer and sheet metal contractor and is, therefore, reproduced in part herewith.

"All these leaks that come from heating plants and flues are unnecessary. A home builder came to us a few days ago and said that he must reduce the cost of his new home, and that he was convinced the way to do this was to use a different kind of a warm air furnace than he had selected. He found he could save almost \$150 by taking the cheapest plant to be found. After all a furnace was only a stove with a bit of sheet metal around it and pipes to the various rooms. How could there be \$150 difference in real value in this equipment?

"It was promptly shown him that it was a matter of leaks. That \$150 difference could be quickly dispatched in extra laundry bills, extra doctor bills, extra coal bills.

"One of the surest things ever said about home building is that you pay for good materials whether you get them or not. Why not get them in the first place?

"Another part of the heating plant, the flue, is a prolific source of leaks. There should be exactly two holes in a flue and no more. The flue should be lined with tile from the opening where the furnace or stovepipe or fireplace throat joins

in to the tippiest top of the chimney stack. Think what happens in that flue when the soot accumulates and takes fire as it often does. If there is an opening somewhere along the stack, where the mortar has fallen out between the bricks, what is to prevent the blazing soot from going through this opening rather than out of the top of the chimney? Perhaps this casual opening is in the attic where there is the usual accumulation of materials that we do not have the courage quite to

throw away. Fire starts and the home is ruined. Flue linings cost so little that they can hardly be found in the masonry bill, and yet they pay dividends year after year in production."

It is needless to say that information of this type disseminated by a local newspaper is helping the furnace dealer to raise the public estimation of his business. Editors of these local papers should be encouraged wherever possible in work of this kind.

ness. He tells the salesman, "No, I haven't time to read any magazines."

Right here, let me say, that the history of this man as a business man stops at this point and he is doomed to a future existence by the work of his hands and as a mechanic only.

Let's take another case where this man does subscribe to this magazine and says to the salesman, "All right, send me the magazine, because I want to expand my business and from what you tell me about your magazine, I believe it will do me some good."

In the very first issue he receives he reads an article about overhead cost, about a meeting of some Sheet Metal Contractors' Association, something about a new Standard Code regulating the installation of warm air heating plants. This latter reads like Greek at first, but he reads it several times and the next time a furnace salesman drops in, gets him to explain the whole idea. He commences to realize that it is possible to secure information from nearly every salesman who calls on him and he uses the ideas that appeal to him, and soon finds out that his business is growing very rapidly.

Now these same opportunities for getting information which have been in existence for the last twenty years are still happening and it is to be regretted that so few men take many of the progressive ideas that are presented and use them in their own business.

To the men in the heating industry, there is a mass of material now available which has been accumulated from research work at which the National Warm Air Heating and Ventilating Association has been doing at the University of Illinois under the direction of Professor A. C. Willard. This information is extremely valuable to the progressive dealer, and it is available for use, free of charge. The developments of this research work are showing conclusively that for residential work there is no system to compare with a warm air heating plant when it is properly installed.

Furnace Installers Must Take Advantage of Code Precepts

National Association Ready to Help Installer Produce More Business

OPPORTUNITY in the field of warm air heating has never been greater than it is today. Not very many people realize this, nor do they know the causes that have been leading up to present events.

For nearly twenty years I have been attending the meetings of the National Association of Sheet Metal Contractors and at every meeting I have listened to the report of a Warm Air Furnace Committee. Have listened to and taken part in the discussions that have been brought out by these reports and in every instance the plea or rather demand that has been made has been "Better Installation," and this, in no uncertain terms. You men have spoken through your own representatives.

Every one has had an opportunity to read about these reports when published in the Trade Papers. Consequently there is no excuse for any sheet metal contractor or furnace installer not knowing of the things that are going on. For some reason or other however, a large percentage of the furnace installers have been so busy attending to details of their

own business and so engrossed with the petty things immediately at hand that they have unintentionally overlooked some of the big things towards which their natural ambition and personal desires have been leading them. They have become slaves to small things, wasted their time on trivial matters and overlooked the big things in life by their utter disregard of the things that are going on around them every day.

When a man is just starting out in the business, he is naturally limited in capital and has to work himself at least to make a living. By exerting a little thrift and being alert to future business he eventually hires an assistant to help him. Right at this point is a critical turning point in his business, for it is at this period that his business commences to expand and he finds that it is necessary for him to remove his overalls and resort to planning ahead to keep the extra man busy and to secure enough business to keep his shop running so as to meet his bills. He is now practically using his brain to furnish a living for two people.

Some Monday morning a salesman for a Trade Paper walks into his shop and tries to interest him in the magazine and the possibility of getting some ideas out of the magazine which will help him in his busi-

*Address of President E. B. Langenberg of the National Warm Air Heating and Ventilating Association, delivered at the Missouri Sheet Metal Contractors' Association convention at Springfield, Missouri, April 5 and 6, 1926.

The establishing of the Standard Code has been the result of the untiring efforts of the sheet metal contractors through their national organization. They have had a great part in the work of writing this Code and with the support of the manufacturers and engineers the Code is now accepted as the best rule for installing warm air heating plants in residences.

After all the time and money that has been spent in getting the Code, it should be used by you as a sales asset and a medium by which your heating business can be increased one-hundred fold. Getting the story of the Code into the hands of the public stimulates interest in this type of heating and every customer that you have is a possible prospect, for a new furnace or the replacement of an old one.

L. Wayne Arny, who is our Director of Public Relations, has prepared a number of most interesting booklets for the consumer and these can be secured at a very nominal cost by writing to him at 52 West Gay Street, Columbus, Ohio. Mr. Arny has also prepared an issue each month a single sheet called "The Furnace Installer." This gives you each month a new selling idea which has been tested out and proven as being very successful by other men and it is well worth your while to see that your name is on his mailing list.

The National Warm Air Heating & Ventilating Association in an earnest endeavor to secure the co-operation of all furnace installers in the United States has created what is called, an Associate Membership at a flat charge of \$10.00 per year. Every furnace installer is eligible to membership and this entitles him to all the Research Bulletins that are issued by the University of Illinois on warm air heating and also to the Monthly Bulletin of the Association, The Furnace Installer, and copies of all literature issued by that Association.

At the present time the Association is asking all furnace installers who make their installations according to the Standard Code to sign a

pledge card. This card is filed at the office of the association against the time in the very near future when a National Advertising Campaign will be undertaken and when inquiries are received from this campaign, they will be turned over to only such dealers as have made a pledge that they will install their furnaces according to the Standard Code.

Naturally, this advertising campaign is going to stimulate the sale of Warm Air Plants and the progressive installer and all those who plan to make the heating business a major part of their business will make no mistake by taking out an Associate Member and by signing a Pledge Card.

You men that attend these state conventions of sheet metal contractors year after year know the value of suggestions like this and others that you will hear here today, and should by all means take these messages back to your own home town and try as far as possible to secure the co-operation of your competitors to the end that your business in your town shall be looked up to as a

necessity to the community and demand that respect to which the Metal Working Industry is entitled.

Use the Standard Code and make it a part of your business. Use it as a Sales Asset. Once the Public realizes the benefits that they will derive from the use of it, they will have more confidence in you and your goods.

There are possibilities for profit in the vicinity of your home town that you as yet have not touched. Get up a mailing list and work this territory systematically. Analyze the territory. Study the possibilities. Plan out a sales campaign and ask the factory from whom you buy your goods to give you some assistance. They will gladly help.

Select the lines you handle, with care, and have in mind that your guarantee must be placed with the manufacturers when you talk to the consumer. Make every sale you close assist you in other sales. Build for the future.

The opportunities today are greater than they ever were and it is up to each individual business man to get his share.

At Least 308 Square Inches Required in Eickelberg Job Living Room

Sun Parlor Should Have 18-Inch Cold Air Return—Bath Room Is O. K.

By C. H. WILDER, Melrose Park, Illinois

IN ANSWER to William C. Eickelberg, Waterloo, Iowa, regarding his problems of heating a house, let me say:

In order to heat this house properly it will be necessary to deliver into the living room, 14x20x18 feet C, at least 308 square inches of warm air. This would require a 22-inch cold air pipe. You have a 24x30-inch woodface, nearly large enough for 22-inch pipe. Simply increase this pipe to 22 inches. The dining room, 12x15x9 feet C, should have a 12-inch warm air pipe or 113 square inches, properly connected without friction, independent of any other room.

The kitchen is 8x12x9 feet C and should have a 10-inch warm air pipe or 78 square inches. Sun parlor shows 9x11x9 feet C, but plan measurement shows 9x14x9 feet C, taking into consideration the glass exposure, it will be necessary to deliver in this room 154 square inches of warm air or a 14-inch pipe, and also should have 18-inch cold air return from it, inasmuch as you already have an 18-inch in the dining room.

Your bedrooms on the second floor I would connect with a 10-inch warm air pipe from the furnace, using all frictionless boots and fittings. The bathroom is O. K.;

be sure you use registers and register heads that have the full capacity of the pipe connected to them. Be sure you have an inner casing inside the furnace 4 or 5 inches above the cold air intake to about where hood starts or about 2 inches higher. Be sure to have a dividing plate between each of the cold air boot connections in furnace.

This layout will give you 872 inches of warm air. You say you have a 24x30 woodface in living room. This is nearly large enough for a 22-inch cold air pipe. Increase this pipe to a 22-inch or 380 square inches capacity, two 18-inch cold air capacity, 254 inches each, gives you 888 inches of cold air return. This means a furnace with at least a 27 or 28-inch firepot and at least a

52-inch or 54-inch casing, but it can be warmed with a 26-inch firepot, 52-inch casing.

Be sure your fireplace is not directly open to the chimney flue; have it closed. I take it for granted the stairway is open work, otherwise it will be necessary to have a cold air at the foot of the stairway.

This layout is based on nearly 100 per cent heating, as I believe all heating should be figured. On account of the high ceiling in living room it will be necessary to always have second floor rooms warm. It requires a larger furnace on account of large front rooms. To overcome chilly air dropping over open railing it will be necessary to carry same temperature on second floor as on first floor.

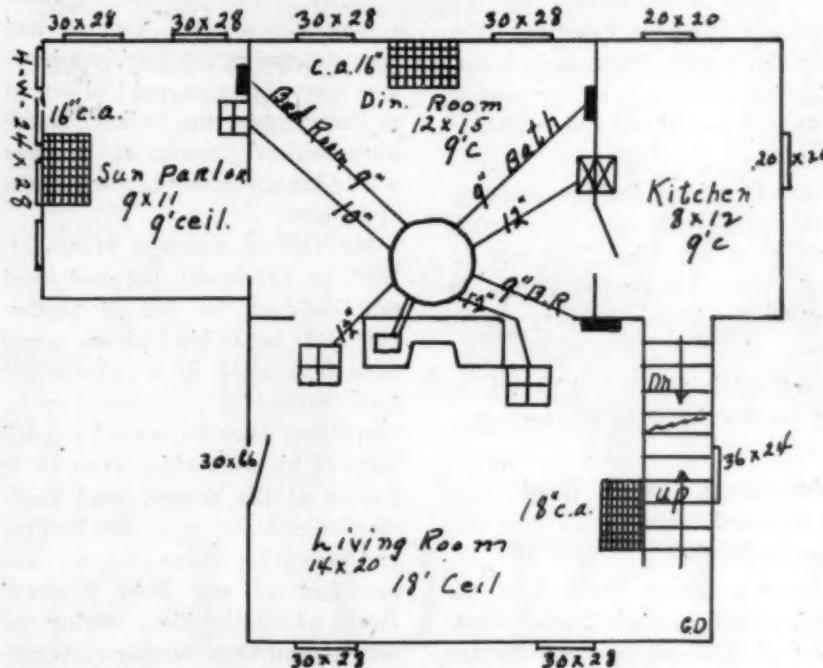
Hann and Fisk Would Add a Cold Air Duct to Sun Parlor on Eickelberg Installation

One Living Room Duct Increased from 10 to 12-Inch; Kitchen and Living Room Duct Also Increased

IN OUR issue of March 27, 1926, William C. Eickelberg, Waterloo, Iowa, submitted the floor plan of a dwelling house having a somewhat unusual situation to meet in heating

it with warm air. Mr. Eickelberg said the system functioned properly, with the exception of the living room.

G. F. Hann and William Fisk,



Arrangement of Eickelberg Installation as Worked Out by G. F. Hann and William Fisk.

of the Henry Furnace & Foundry Company, Muncie, Indiana, branch have submitted a few changes which they think will do the trick.

In the accompanying illustration it will be seen that they have increased the warm air duct supplying the kitchen and dining room with heat from a 10-inch to a 12-inch pipe. They are justified in doing this because, figuring the requirements of these two rooms, which that pipe feeds, according to the Standard Code, we find 85.96 square inches without making any allowances for possible additions.

In the sun parlor the pipe has been increased in size from a 9-inch to a 10-inch. It is thought that these men were justified in making this increase, as they undoubtedly have considered that there are three exposed walls on this room. Code requirements call for 56.77 square inches to this room, and in order to be absolutely safe, they have made the pipe size one inch larger.

In the living room, the one with which Mr. Eickelberg has had the difficulty, they have increased the size of one of the warm air ducts from a 10-inch pipe to a 12-inch pipe.

The second floor ducts remain the same as they are shown on the diagram in the March 27th issue.

With regard to the cold air, they have made considerable changes. The cold air return in the dining room is left where it was, but reduced in size from an 18-inch to a 16-inch pipe.

In the living room they have moved the cold air duct over under the banister and reduced it to an 18-inch pipe. The sun parlor received a 16-inch cold air return.

They are of the opinion that the size of the furnace should be such that it would be capable of producing sufficient heat for 606 inches of leader pipe, with a grate area of at least 345 inches.

If you are having difficulty understanding the application of the Standard Furnace Code, send the details of the job to the editor of American Artisan.

**American Society Appoints
P. E. Fansler Director
of Public Relations**

Action has been taken to bring the story of heating and ventilation to the public in general and to the engineering profession in particular, so that they may benefit to a greater degree from the achievements of the heating and ventilating industry and particularly from the research work of the American Society of Heating and Ventilating Engineers.

The National Council has inaugurated a Department of Public Relations and has announced the appointment of P. E. Fansler as Secretary of this department, effective March 15. As Secretary of Public Relations he will make a study of and interpret the basic engineering principles involved in the heating and ventilation of buildings, with special attention to the scientific investigations conducted at the society's Research Laboratory, with a view of making the accumulated data available in form useful to the profession and interesting to the public.

Mr. Fansler is the associate editor of the *Heating and Ventilating Magazine* and is temporarily on detached service. Since entering this field he has made an intensive study of heating and ventilation and has contributed a number of important articles on these subjects, particularly on oil and gas heating. He is a graduate of Purdue University, class of 1901, with a degree of B.S. in Electrical Engineering, and two years later received the highest professional degree conferred by the university, that of Electrical Engineer.

At the St. Louis Exposition, Mr. Fansler was assistant to the chief of electricity, and at its conclusion became associated with J. G. White and Company as assistant business manager of the Engineering department, where for three years in addition to executive duties he directed country-wide publicity work done in the interest of this company. Following this for two years he was a consulting publicity engineer, having prepared for this work by several years of newspaper reportorial work and technical writing as special cor-

respondent for *The Electrician* of London and *L'Electricien* of Paris, as well as writing many articles for American technical magazines.

**New Double
Sealing Furnaces,
Eliminates Gasing**

The warm air furnace industry will be pleased to learn that many furnace installers are recommending the use of Insa-Lute for double



The Insulate

sealing warm air furnaces which makes them absolutely gas-tight, thereby eliminating the costly complaints about new and old furnaces which cause expense and damage to interiors.

Insa-Lute has been used for many years in the manufacture of electrical heating apparatus, repairing, etc., by some of the largest factories. It is manufactured by the Technical Products Company, 116 Sheridan Square, Pittsburgh, Pennsylvania, specialists in the manufacture of assembling and insulating cements.

Insa-Lute is applied like painting, with a wet brush, over the asbestos cement, at the joints. It may be used in new installations or on old furnaces without tearing them down.

Full details can be had by writing the Technical Products Company.

**John Joseph Charles, Head
of Hibbard-Spencer,
Dies in West**

News has been received of the death of John Joseph Charles, President of Hibbard, Spencer, Bartlett & Company, Tuesday, April 6, in Pasadena, California, where he and

his wife were spending a winter vacation visiting their daughter, Mrs. Benson A. Talbot.

Mr. Charles had been in active charge of the management of the hardware concern, superintending the construction of their new building until his departure in January. He did not complain of illness.

Born in Williamsport, Maryland, in 1856, Mr. Charles came to Chicago shortly after the great fire. He obtained his first job with John V. Farwell & Company, and later worked for the Pullman Company. In 1873 he entered the Hibbard, Spencer, Bartlett & Company firm, working his way upward until he became President in 1915. Mr. Charles played golf and belonged to the Glen View Club.

Besides his widow and the daughter in California, Mr. Charles leaves two sons, Sherman and John J., Jr., and a daughter, Mrs. Walter Rompel of Evanston. The Charles home is at 1310 Hinman avenue, Evanston.

**Jacob G. DePrez,
Indiana Hardware Man,
Dies After Long Illness**

Jacob G. DePrez, age seventy-one, veteran hardware dealer, died Wednesday night, March 31, at his home at Shelbyville, Indiana, after a long illness. Mr. DePrez had been engaged in the hardware business forty-six years and had served as President of the Indiana Hardware Dealers' Association. He was widely known among hardware men of Indiana.

Mr. DePrez was born March 24, 1855, at Cincinnati, but had lived practically all his life in Shelbyville. He began his business career here as a clerk in a bakery and later clerked in a hardware store. Some time later he opened a small store of his own which grew to be known as the largest retail hardware store in the state. Mr. DePrez had served for many years as vice-president of the First National Bank, of Shelbyville. During the administration of former Governor James P. Goodrich he served as a member of the board of control of

Lupton Elbows make a satisfying job

PLEASING to the buyer, convenient for the men who erect them, Lupton Elbows make a satisfying job.

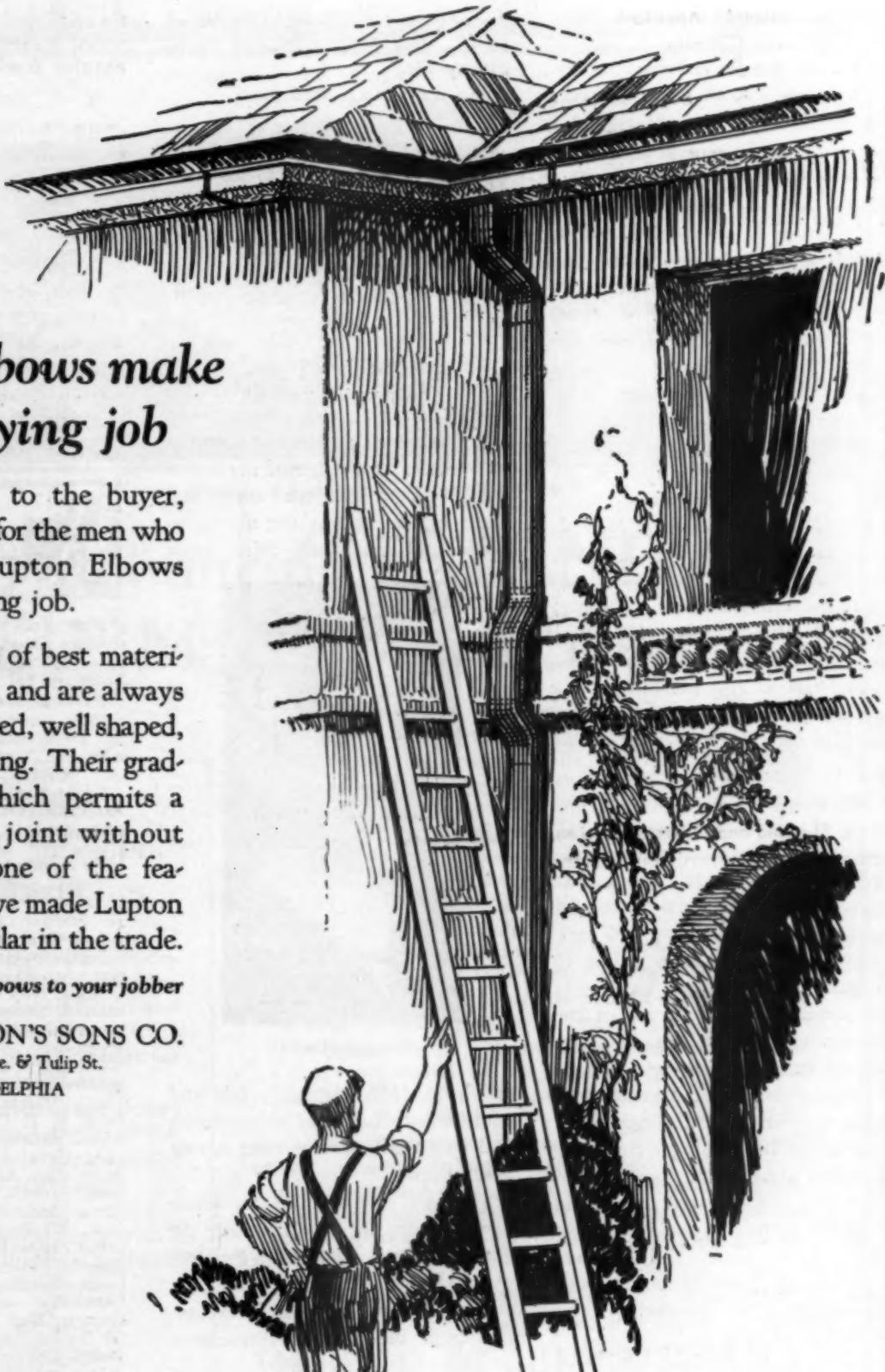
They are made of best materials in all metals, and are always cleanly galvanized, well shaped, and perfect fitting. Their graduated taper which permits a quick positive joint without solder is but one of the features which have made Lupton Elbows so popular in the trade.

Specify Lupton Elbows to your jobber

DAVID LUPTON'S SONS CO.

Allegheny Ave. & Tulip St.

PHILADELPHIA



L U P T O N

E L B O W S T H A T F I T

Say you saw it in AMERICAN ARTISAN—Thank you!

the Indiana Boys' School at Plainfield.

Mr. DePrez is survived by the widow; one son, D. Wray DePrez;

a brother, William DePrez, and a sister, Mrs. Maggie Stroup, all of Shelbyville.

He was always well liked.

Death Claims George Mitchell, President Manufacturers Protective Association

Was Widely Known for His Good Work in Stove Manufacturing Circles

GEORGE MITCHELL, President of the Manufacturers' Protective and Development Association, died Friday, March 26, 1926.

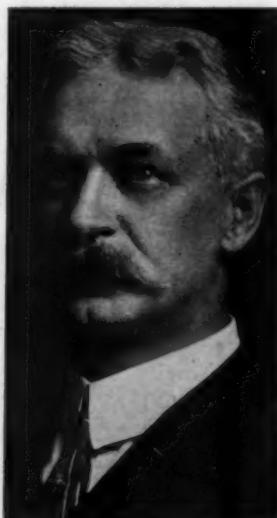
Mr. Mitchell was born May 3, 1856, in New York City. At the age of 25 years he became a director in the Pittston Stove Company, Pittston, Pennsylvania. Mr. Mitchell made a brilliant success in the stove business and in spite of his youth, became President and General-Manager of the company as early as 1892.

One of Mr. Mitchell's outstanding traits of character was his faith and unqualified belief in co-operative organizations. His aim, as has been that of all other successful men, was always to surround himself with men who were willing to co-operate with him. That he was successful in this, a survey of the organizations which he built up will attest.

He was one of the prime factors in the movement, which began away back in the 1890's, to get closer co-operation unity among stove manufacturers. Out of this movement came the formation in 1902 of the New York State and Eastern Pennsylvania Stove Manufacturers' Association. Mr. Mitchell became President of this body, a position which he zealously filled with credit to himself and benefit to the industry until 1910. Stepping from head of this organization in 1910, Mr. Mitchell was called to serve as president of the Stove Founders' National Defense Association.

The Stove Founders' National Defense Association was later

changed to the Manufacturers' Protective Development Association. The duties of this position required an intimate knowledge of the crafts used in the production of stoves and furnaces, as well as the ability to understand and handle fairly labor



George Mitchell

problems. Mr. Mitchell's fair and equitable discharge of these duties had won for him many and lasting friendships.

He also continued as an active executive in his own concern, the Pittston Stove Company, Pittston, Pennsylvania, and always took an active and loyal interest in the activities of the National Association of Stove Manufacturers.

For the past year Mr. Mitchell's health had not been of the best, but true to his character his own physical indisposition was never allowed to deter him from the discharge of his many duties. Mr. Mitchell's widow is at present residing in Scranton, Pennsylvania.

A. C. McKinnie, General Manager of Stanley Works, Dies

A. C. McKinnie, General Sales Manager of the Stanley Works, New Britain, Connecticut, died last month. A Kansan by birth, he early entered the hardware business. In 1891 he entered the employ of the Simmons Hardware Co., St. Louis, Missouri. Six years later he became connected with the Stanley Works, where his promotion was rapid. He had a large circle of friends among Hardware men especially. He was but fifty-two years of age.



New York State Sheet Metal Contractors Association, Elmira, New York, April 14 and 15, 1926. John J. Yager, Secretary, 817 Sycamore Street, Buffalo.

National Warm Air Heating & Ventilating Association, Annual Convention, St. Louis, Missouri, April 14 and 15. Allen W. Williams, Secretary, 52 West Gay Street, Columbus, Ohio.

Pennsylvania Sheet Metal Contractors' Association, Hotel Lycoming, Williamsport, April 14, 15 and 16, 1926. W. F. Angermyer, Secretary, 7253-55 Frankstown Avenue, Pittsburgh.

Texas Sheet Metal Contractors' Association, Dallas, April 22 and 23, 1926. H. Stanyer, Secretary-Treasurer, 2422 Alamo Street, Dallas.

Southern Hardware Jobbers Association, Atlanta—Biltmore Hotel, Atlanta, Georgia, May 4, 5, 6 and 7, 1925. John Donnan, Secretary-Treasurer, 821 American National Bank Building, Richmond, Virginia.

Old Guard Southern Hardware Salesmen's Association, Atlanta-Biltmore Hotel, Atlanta, Georgia, May 5. R. P. Boyd, R. F. D. No. 4, Knoxville, Tennessee, Secretary.

American Hardware Manufacturers' Association, Atlanta Biltmore Hotel, Atlanta, Georgia, May 4, 5, 6 and 7, 1926. Frederick D. Mitchell, Secretary-Treasurer, 1819 Broadway, New York City.

Southeastern Retail Hardware and Implement Association, (composed of Alabama, Florida, Georgia and Tennessee) Convention and Exhibition, Atlanta, Georgia, May 10, 11 and 12, 1926. Walter Harlan, Secretary, 701 Grand Theatre Building, Atlanta.

Panhandle Hardware and Implement Association, Amarillo Hotel, Amarillo, May 10, 11, and 12, 1926. C. L. Thompson, Secretary-Treasurer, Canyon.

Metal Branch of National Hardware Association, Gibson Hotel, Cincinnati, Ohio, May 13 and 14, 1926. W. H. Donlevy, Chairman, 1014 Cherry Street, Philadelphia, Pennsylvania.

Arkansas Retail Hardware Association, Little Rock, Arkansas, May, 1926. L. P. Biggs, Secretary, 815 Southern Trust Building, Little Rock.



The mark of superior quality on Galvanized Steel Sheets

Announcing INLAND "TEC" Master Brand Sheets

Copper Alloy Steel for Exposed Uses

For all exposed uses or wherever an extremely durable galvanized sheet is required we recommend and urge the use of Inland Copper Alloy Steel as a base for Master Brand Sheets.

Tests and usage prove that Copper Alloy Steels last much longer than regular open hearth steels.

"TEC" Master Brand galvanized sheets made with a Copper Alloy base will give the utmost in service.



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SHEET STEEL™
TRADE EXTENSION COMMITTEE

SIMULTANEOUSLY with the announcement by the Sheet Steel Trade Extension Committee of the "TEC" (Trade Extension Committee) Master Brand, these sheets are made available by the Inland Steel Company.

The Inland Steel Company, as one of the cooperators in the movement for higher quality and broader markets, is licensed to use this mark.

The Master Brand mark signifies that the sheets bearing it have been manufactured under the exacting specification of the Trade Extension Committee and are subject to constant inspection and test. This specification is the result of years of careful thought and study by leaders in the industry.

The Inland Steel Company, long noted for the quality and uniformity of its sheets, whole-heartedly subscribes to the Committee's specification and adds the Master Brand mark as a further indication of its desire to contribute to the raising of quality standards in the industry. Inland Master Brand sheets carry a double assurance of uniform quality and can be immediately identified as they will also carry the Inland brand. Upon request we will supply complete information about Master Brand sheets.



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St. Paul Seattle St. Louis San Francisco Salt Lake City
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First Quarter Production of Steel Greatest on Record—Heavy Demands Hold Up

Valley Pig Iron Prices Marked Down Small Turnover in Non-Ferrous Metals

After having achieved the greatest first quarter production of steel on record, the industry is looking forward to the next three months with modified expectations.

Producers are not allowing themselves to believe that the present flood-tide movement of tonnage can be prolonged indefinitely.

For the parallel to run true with 1925 and 1924 the crest of early year demand already should have been passed. Such is not the case, however, for the situation is yet to develop trustworthy facts or symptoms that either demand or consumption has entered the stage of material contraction.

Against a slowing down of the sheet market, believed to have been contributed in part by weather conditions, a break of pig iron in the valleys and some display of less favorable sentiment, there are various offsetting examples of undiminished vitality in underlying conditions. Some of the most striking of these have to do with the Chicago district. Following record-breaking production and shipments in March, Chicago mills find themselves at present with order books even larger than a month ago. Plates, which have been a lagging product, have undergone a noticeable strengthening, both in price and tonnage, and deliveries have fallen back with several producers.

Pig Iron

After holding steady for five months, the valley and Pittsburgh pig iron market, largely through the aggression of one producer, has broken abruptly this week \$1 to \$1.50 a ton.

Foundry and malleable have been sold down to \$19 valley, basic to \$18.50 and Bessemer to \$19.50.

This decline follows some recent quiet selling by an outside interest at \$20 valley, which several nearby

producers suddenly decided to combat.

At Chicago spot selling of northern pig iron is heavier, a natural sequel to holding back of second quarter requirements by some melters.

Typical of this situation is the placing of about 100 tons of iron each week for several weeks past by a Wisconsin interest.

Some producers in the Chicago district have reduced No. 2 foundry and malleable from \$23 to \$22, Chicago furnace.

Moderate selling for second quarter continues in the pig iron market at Birmingham. No. 2 foundry is quotable at \$22 for second quarter and \$23 for small, prompt lots.

Melters are asking for steady delivery and inquiries have been frequent during the past few weeks, including a few for third quarter.

Copper

Some metal went below 14 cents delivered, but the tonnages were mostly small and producers as a general thing held the bulk of their metal close to this figure.

Custom smelters also had some they wanted to turn over at that time. The first few days of April have found this market much firmer at 14 cents, but not much business has been done.

Shipments on old orders continue large and the leading brass mill reports greater orders on hand than a year ago.

Tin

The tin market in New York is invariably dull when the London and Singapore markets are closed, and today trading has been virtually at a standstill.

No offers have been received from London or the Far East since Thursday and in the absence of offers dealers are not disposed to do

anything, and except for a small consuming demand for prompt, tin buyers have shown no disposition to act.

In the absence of business the prices are nominally unchanged at 64 cents for Straits tin for prompt and April delivery, 63 cents for May, 62 cents for June, 61.37½ cents for July.

Zinc

The price has been steady at about 7.20 cents East St. Louis for several days, though little business has been done between smelters and galvanizers.

Some metal sold about a week ago at 7.15 cents and then very little as the market eased, but as it became firmer a few days ago some business was done around the present level.

Lead

A good tonnage has been sold in a quiet way lately and smelters are well sold for April.

The result is that, though the bulk of the business has been done at 8 cents East St. Louis and 8.20 cents New York, prompt shipment commands a premium.

Old Metals

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$17.50 to \$18.00; old iron axles, \$25.50 to \$26.00; steel springs, \$18.50 to \$19.00; No. 1 wrought iron, \$13.00 to \$13.50; No. 1 cast, \$15.50 to \$16.00, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 9 cents; zinc, 5 cents, and cast aluminum, 19 cents.

Solder

Chicago warehouse prices on solder are as follows: Warranted 50-50, \$40.50; commercial 45-55, \$38.00, and plumbers', \$35.50, all per 100 pounds.

UNISHEAR

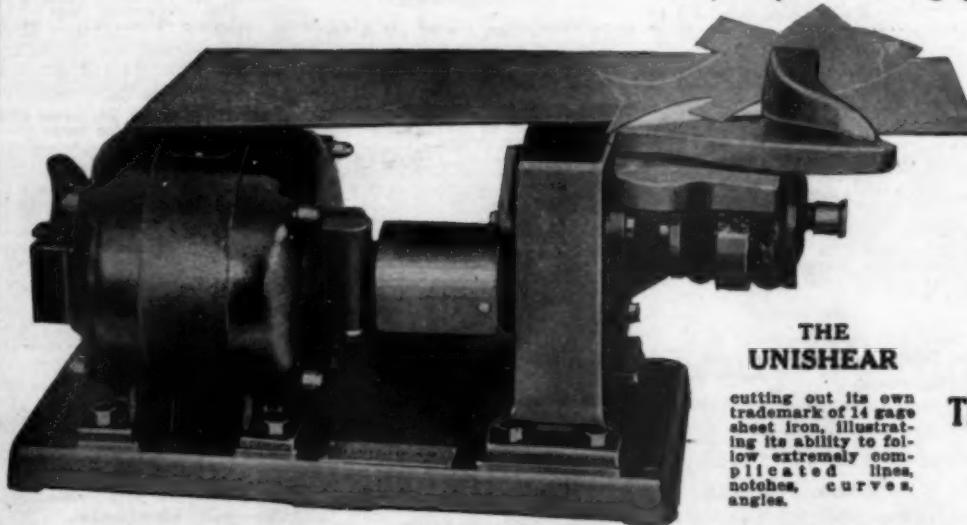
Portable and compact, Unishear cuts *any flat stock* quicker, better, cheaper—without burr, without distortion of material. Follows any line exactly, stops accurately at any point.

Needs but one operator even on largest work, straight or irregular.

Operates from lamp socket or power circuit. "General Electric Motor" any Voltage or Cycle Available.

Capacity 14 U. S. gage Sheet Steel.

Speed fifteen feet per minute.



THE
UNISHEAR

cutting out its own trademark of 14 gage sheet Iron, illustrating its ability to follow extremely complicated lines, notches, curves, angles.

Ask us to demonstrate this machine on your work.

Dealers and Salesmen wanted in unassigned territory.

The Unishear Co., Inc.

170 FIFTH AVENUE
NEW YORK, N. Y.

(For export apply to: Unishear Corporation, 104 Fifth Avenue, New York, N. Y.)

SPECO

SOLID SAL AMMONIAC

*for cleaning and
tinning soldering irons*

It outlasts 5 times its weight of the old-fashioned "lump," keeps copper in good condition, does not crumble and corrode metal work near job or tools. Saves filing copper; saves trouble, time and money.

1-2 lb. Cake—
(Equal to 2½ lbs. of
"lump" Sal-ammoniac)

1 lb. Cake—
(Equal to 5 lbs. of
"lump" Sal-ammoniac)

Write for Dealer's Prices

Made by

**SPECIAL CHEMICALS
COMPANY**

Highland Park, Illinois



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A brand as old as the Terne Plate Industry in this country—the best that can be made by the oldest and most experienced makers of Terne Plate. Its durability, superior quality and complete satisfaction are proven by its large sales to a host of satisfied users.

FREE—two wall hangers of tables of weights of black and galvanized sheets sent on request.

THE J. M. & L. A. OSBORN CO.

"Everything used in Sheet Metal Work"

CLEVELAND

BUFFALO WAREHOUSE: 64-68 RAPIN STREET

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON

Chicago Foundry	\$22.00
Southern Fdy., No. 2	27.01
Lake Superior Charcoal	29.04
Malleable	28.00

FIRST QUALITY BRIGHT TIN PLATES

IC	20x28 112 sheets	\$27.00
IX	20x28	31.25
IXX	20x28 56 sheets	17.05
IXXX	20x28	18.40
IXXXX	20x28	20.00

TERNE PLATES

	Per Box	
IC 20x28, 40-lb.	112 sheets	\$25.10
IX 20x28, 40-lb.	"	28.00
IC 20x28, 30-lb.	"	28.00
IX 20x28, 30-lb.	"	34.20
IC 20x28, 25-lb.	"	30.00
IX 20x28, 25-lb.	"	32.00
IC 20x28, 20-lb.	"	17.00
IV 20x28, 20-lb.	"	20.65
IC 20x28, 15-lb.	"	16.00
IC 20x28, 12-lb.	"	15.25
IC 20x28, 8-lb.	"	13.50

"ARMO" INGOT IRON PLATES

No. 8 ga. up to and including	
4 in.—100 lbs.	4.65

COKE PLATES

Cokes, 80 lbs., base, 20x28	\$12.75
Cokes, 90 lbs., base, 20x28	12.55
Cokes, 100 lbs., base, 20x28	13.25
Cokes, 107 lbs., base, 1c	
20x28	13.00
Cokes, 125 lbs., base, IX	
20x28	15.40
Cokes, 155 lbs., base, 88	
sheets	8.80
Cokes, 175 lbs., base, 56	
sheets	9.70
Cokes, 195 lbs., base, 56	
sheets	10.65

BLUE ANNEALED SHEETS

Base 16 ga.	per 100 lbs.	\$2.25
"Armo" 16 ga.	per 100 lbs.	4.00

ONE PASS COLD ROLLED BLACK

No. 18-20	per 100 lbs.	\$2.50
No. 22-24	per 100 lbs.	2.50
No. 26	per 100 lbs.	2.50
No. 27	per 100 lbs.	2.50
No. 28	per 100 lbs.	4.10
No. 29	per 100 lbs.	4.10

GALVANIZED

"Armo" 28	per 100 lbs.	\$6.75
No. 18	per 100 lbs.	4.50
No. 18-20	per 100 lbs.	4.65
No. 22-24	per 100 lbs.	2.90
No. 26	per 100 lbs.	4.95
No. 27	per 100 lbs.	5.10
No. 28	per 100 lbs.	5.25
No. 30	per 100 lbs.	6.75

BAR SOLDER

Warranted		
50-50	per 100 lbs.	40.50

Commercial		
45-55	per 100 lbs.	28.00

PLUMBERS

Plumbers	per 100 lbs.	35.50
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ZINC

In Slabs		8.50
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SHEET ZINC

Cask Lots (500 lbs.)		13.75
Sheet Lots		14.75

BRASS

Sheets, Chicago base		18 1/2%
Mill base		18 1/2%
Tubing, brazed base		27 1/2%
Wire, base		19 1/2%
Rods, base		16 1/2%

COPPER

Sheets, Chicago base		22 1/4%
Mill base		22 1/4%
Tubing, seamless base		25 1/2%
Wire No. 9 & 10, B. & B. Ga.		20 1/2%
Wire No. 11, B. & S. Ga.		20 1/2%

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

LEAD

American Pig		\$1.00
Bar		10.00

TIN

Pig Tin		per 100 lbs. 73.50
Bar Tin		per 100 lbs. 74.50

ASBESTOS

Paper up to 1/16		.60 per lb.
Roll board		6 1/2¢ per lb.
Mill board 1/8 to 1/4		.60 per lb.
Corrugated Paper (250 sp. ft. to roll)		\$.60.00 per roll

BRUSHES

Hot Air Pipe Cleaning		
Bristle, with handle, each		45¢

Flue Cleaning		
Steel Only, each		1.25

BURRS

Coppers Burrs only		18%
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CEMENT, FURNACE

American Seal, 5-lb. cans, net		\$.45
American Seal, 50-lb. cans, net		.90
American Seal, 25-lb. cans, net		3.00
Asbestos, 5-lb. cans, net		45

Pecora		per 100 lbs. 7.51
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CHIMNEY TOPS

Iwan's Complete Rev. &		
Vent		30%
Iwan's Iron Mountain only		35%

Standard		30 to 40%
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CLINKER TONGS

Front Rank, each		\$1.75
Per doz.		\$1.40

CLIPS

Damper		
Acme, with tail pieces, per doz.		\$1.25

Non Rivet tail pieces, per doz.		95
per doz.		95

COPPERS—Soldering

Pointed Roofing		
2 lb. and heavier...per lb.		.40¢

2 1/2 lb.45¢
3 lb.48¢
3 1/2 lb.50¢

4 lb.55¢
5 lb.60¢
5 1/2 lb.65¢

CORNICE BRAKES

Chicago Steel Bending		
No. 1 to 6B		Net

COUPLING HOSE

Brass		per doz. \$3.30
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CUT-OFFS

Kuehn's Korrekt Kutoffs:		
Galv., plain, round or corr. rd. standard gauge		40%
26 gauge		38%

DAMPERS

"Yankee" Hot Air		
7 inch, each 30c, doz.		\$1.75
8 inch, each 35c, doz.		2.40
9 inch, each 30c, doz.		2.75
10 inch, each 32c, doz.		3.00

SMOKE PIPE

7 inch, each		\$1.85

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WE make both kinds of galvanized shingles — hand dipped being stamped from prime tin plate and immersed one at a time in molten zinc and the other kind which are stamped from sheets already galvanized.

We also make painted shingles—either red or green.

CORTRIGHT METAL ROOFING CO.
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Metal Ceilings
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In Steel, Zinc, Brass, Copper, Tinplate, etc.
For All Screening, Ventilating and Draining
EVERYTHING IN PERFORATING METAL

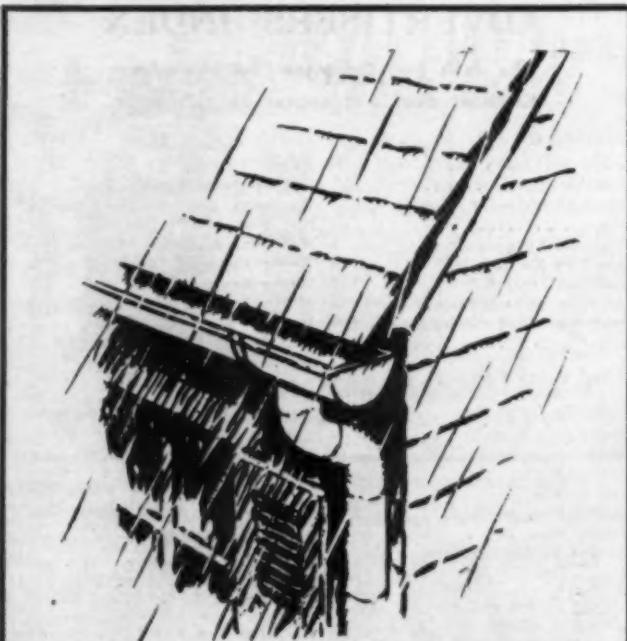
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229 to 237 ARCH STREET
WAREROOMS AND FACTORY: 100 TO 114 BREAD STREET
PHILADELPHIA, PA.



Any Spring Rain will Test Your Sheet Metal

If you've used ARMCO Ingot Iron, neither you nor your customers need worry about spring rains. The rust-resisting qualities of "the purest iron made" assure durable protection against the rain that causes rust.

ARMCO Ingot Iron is a carefully manufactured iron, practically free from rust-promoting impurities. Consequently it carries a heavier, purer galvanized coating. These qualities enable you to offer your customers a doubly protective sheet metal, one that will last for many years to come.

That's the reason why contractors who suggest ARMCO Ingot Iron find that it's not hard to sell. Sheet metal prospects everywhere recognize ARMCO Ingot Iron as a long-lasting, economical sheet metal.

The American Rolling Mill Company

MIDDLETOWN, OHIO

Export: The ARMCO International Corp.
Cable Address: — ARMCO, Middletown

The Iron
Like To



You Will
Work

ARMCO INGOT IRON

The Purest Iron Made

Selling Rapidly Our Two Latest Lever Punches



New No. 8 Medium-Capacity, Close-Corner Punch. Just out. Punches Easier, Deeper Throat, Simpler, Fewer Parts. Quicker punch changing—without Tools. Upper Lever does not throw back to Right Angles. Side Gauge. Length 18 inches. Capacity $\frac{1}{4}$ through $\frac{3}{4}$ Iron.

No. 4 Tinner's One-Hand Punch.

Same construction as No. 8 Punch above. Length $8\frac{1}{2}$ inches. Weight $3\frac{1}{2}$ lbs. Capacity $\frac{1}{4}$ through 16 gauge iron.

Ask your Jobber or write us for information on our full Lever Punch line.

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MAKE YOUR OWN ELBOWS—

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JUST take your straight pipe—fasten the form or dies to it and in two minutes you have your 3 or 4 piece adjustable elbow all ready for use and any size you want.

PURNELL ELBOW EDGING and CUTTING MACHINE

It is simple, sound and constructed of the very best materials—both installers and manufacturers are using it. No more large stock for the installer. Enables you to make adjustable elbows any size for each job at once when you need them.

Write today for circular giving complete description and price.

Chicago Elbow Machine Co.
MAIN OFFICE: 826 N. Boulevard,
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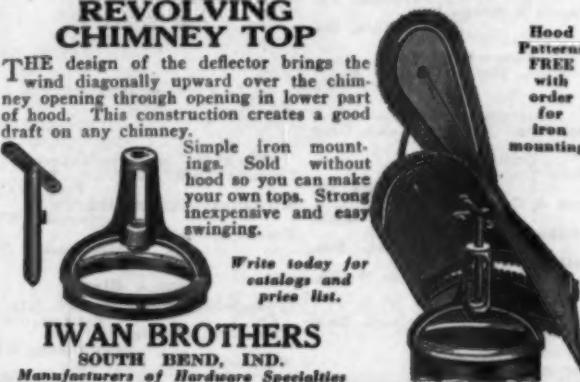
Range of capacity
7 in. to
36 in.
Elbows of
No. 24
gauge
and lighter

Hood
Patterns
FREE
with
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for
iron
mountings

IWANS' VOLCANO REVOLVING CHIMNEY TOP

THE design of the deflector brings the wind diagonally upward over the chimney opening through opening in lower part of hood. This construction creates a good draft on any chimney.

Simple iron mountings. Sold without hood so you can make your own tops. Strong inexpensive and easy swinging.



Write today for catalog and price list.

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SOUTH BEND, IND.
Manufacturers of Hardware Specialties

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STANDARD OF THE WORLD



THE BEST BRAKE FOR ALL PURPOSES: Most Durable, Easiest Operated, Low in Price; Made in All Lengths and to Bend All Gauges of Metal. Over 23,000 in use.

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IS of the rotatable type and swings absolutely free in the slightest draft. The construction is scientifically correct and unusually strong. It works perfectly in all kinds of weather and handles 50 per cent more air than stationary ventilators of equal size. Order from your jobber. Write for our catalog and prices today.

Manufactured by

STANDARD VENTILATOR CO.
LEWISBURG, PA.

MADE RIGHT—TO WORK RIGHT

THE "ALWAYS RELIABLE" furnaces and torches really live up to their name. They will stand any amount of use, much abuse, and still give your customers the kind of service that they have a right to expect.

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No. 14 PUMP,
No. 18 BULB
WRITE FOR
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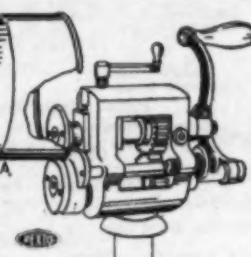
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ELBOW EDGING
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Sull Mountain Co., Chicago, Ill.	Double-Duty Elbow Co., Aurora, Ill.	Robinson Furnace Co., Chicago, Ill.	Great Lakes Supply Co., South Chicago, Ill.
Asbestos Products.	Lupton's Sons Co., David, Philadelphia, Pa.	Rudy Furnace Co., Dowagiac, Mich.	Marshalltown Mfg. Co., Marshalltown, Iowa
Sull Mountain Co., Chicago, Ill.	Milwaukee Corrugating Co., Milwaukee, Wis.	Rybolt Heater Co., Ashland, Ohio	Osborn Co., The J. M. & L. A., Cleveland, Ohio
Bale Tins.		Schill Bros. Co., Crestline, Ohio	Peck, Stow & Wilcox Co., Southington, Conn.
American Steel & Wire Co., Chicago, Ill.	Enamel Ware.	Schwab & Sons Co., R. J., Milwaukee, Wis.	Ryerson & Son, Inc., Joseph T., Chicago, Ill.
Bolts—Stove.	Lalance & Grosjean Mfg. Co., Chicago, Ill.	Security Stove & Mfg. Co., Kansas City, Mo.	Unishear Co., The, New York, N. Y.
Mirk-Latty Mfg. Co., Cleveland, Ohio		Standard Foundry & Mfg. Co., DeKalb, Ill.	Whitney Mfg. Co., W. A., Rockford, Ill.
Brakes—Bending.	American Wood Register Co., Plymouth, Ind.	Standard Furnace & Supply Co., Omaha, Neb.	Whitney Metal Tool Co., Rockford, Ill.
Dreis & Krump Mfg. Co., Chicago, Ill.	Eaglesfield Ventilator Co., Indianapolis, Ind.	St. Clair Foundry Corporation, Belleville, Ill.	Metals—Perforated.
Brakes—Cornice.	Marsh Lumber Co., Dover, Ohio	St. Louis Heating Co., St. Louis, Mo.	Harrington & King Perforating Co., Chicago, Ill.
Dreis & Krump Mfg. Co., Chicago, Ill.	Milwaukee Corrugating Co., Milwaukee, Wis.	Success Heater Mfg. Co., Des Moines, Iowa	
Brass and Copper.		Thatcher Co., Chicago, Ill.	Miters.
Copper & Brass Research Association, New York	Fences.	Utica Heater Co., Utica, N. Y.	Friedley-Voshardt Co., Chicago, Ill.
Hussey & Co., C. G., Pittsburgh, Pa.	American Steel & Wire Co., Chicago, Ill.	Waterman-Waterbury Co., Minneapolis, Minn.	Milwaukee Corrugating Co., Milwaukee, Wis.
Merchant & Evans Co., Philadelphia, Pa.		Western Steel Products Co., Duluth, Minn.	Miters—Eaves Trough.
Cans—Garbage.	Milwaukee Corrugating Co., Milwaukee, Wis.	Wise Furnace Co., Akron, Ohio	Braden Mfg. Co., Terre Haute, Ind.
Osborn Co., The J. M. & L. A., Cleveland, Ohio		Williamson Heater Co., Cincinnati, Ohio	David Lupton's Sons Co., Philadelphia, Pa.
Castings—Malleable.			Milwaukee Corrugating Co., Milwaukee, Wis.
Fanner Mfg. Co., Cleveland, Ohio	Furnace Brushes.		Nails—Hardened Masonry.
Collars—Metal.	Hardware Specialty Co., Fort Wayne, Ind.		Parker-Kalon Co., New York, N. Y.
Friedley-Voshardt Co., Chicago, Ill.	Furnace Cement—Asbestos.		Nails—Slating.
Hopson & Co., W. C., Grand Rapids, Mich.	Connors Paint Mfg. Co., Wm., Troy, N. Y.		Hussey & Co., C. G., Pittsburgh, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.	Milwaukee Corrugating Co., Milwaukee, Wis.		Nails—Wire.
Wheeling Corrugating Co., Wheeling, W. Va.	Pecora Paint Co., Philadelphia, Pa.		American Steel & Wire Co., Chicago, Ill.
Chaplets.	Furnace Rings.		Oil Burners.
Fanner Mfg. Co., Cleveland, Ohio	Independent Register and Mfg. Co., Cleveland, Ohio		Security Stove & Mfg. Co., Kansas City, Mo.
Chain—Sash.	Milwaukee Corrugating Co., Milwaukee, Wis.		Ornaments—Sheet Metal.
Parker-Kalon Corp., New York, N. Y.	Walworth Run Fdy. Co., Cleveland, Ohio		Friedley-Voshardt Co., Chicago, Ill.
Chimney Tops.	Furnace Fans.		Geroek Bros. Mfg. Co., St. Louis, Mo.
Standard Ventilator Co., Lewisburg, Pa.	Heating Systems & Supply Co., Chicago, Ill.		Milwaukee Corrugating Co., Milwaukee, Wis.
Cleaners—Furnace.	Warm Air Furnace Fan Co., The, Cleveland, Ohio		Paint.
Startevant, Boston, Mass.			Connors Paint Mfg. Co., Wm., Troy, N. Y.
Chimney Tops.	Furnaces—Warm Air.		Pecora Paint Co., Philadelphia, Pa.
Iwan Bros., South Bend, Ind.	American Furnace Co., St. Louis, Mo.		Patterns—Furnace & Stove.
Cleaners—Section.	American Foundry & Furnace Co., Bloomington, Ill.		Cleveland Castings Pattern Co., Cleveland, Ohio
Brown, Wm. R., Buffalo, N. Y.	Brillion Iron Works, Brillion, Wis.		Quincy Pattern Co., Quincy, Ill.
Startevant, Boston, Mass.	Chicago Furnace Supply Co., Chicago, Ill.		Vedder Pattern Works, Troy, N. Y.
Clinker Tungs.	Cleveland Cooperative Stove Co., Cleveland, Ohio		Pipe and Fittings—Furnace.
Federal Mfg. Co., Holland, Mich.	Col-Burn Heater Co., Chicago, Ill.		Chicago Furnace Supply Co., Chicago, Ill.
Copper.	Cox Stove Co., Abram, Peoria, Ill.		Excelsior Steel Furnace Co., Chicago, Ill.
Copper & Brass Research Association, New York	Excelsior Steel Furnace Co., Chicago, Ill.		Henry Furnace & Fdy. Co., Cleveland, Ohio
Hussey & Co., C. G., Pittsburgh, Pa.	Floral City Heater Co., Monroe, Mich.		Lamneck Co., W. E., Columbus, Ohio
Cornices.	Forest City Fdy. & Mfg. Co., Cleveland, Ohio		Mayer & Bre. Co., F., Peoria, Ill.
Friedley-Voshardt Co., Chicago, Ill.	Fox Furnace Co., Elyria, Ohio		Milwaukee Corrugating Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.	Heaters—Cabinet.		Mueller Furnace Co., L. J., Milwaukee, Wis.
Cut-Offs—Rain Water.	Heating Systems & Supply Co., Chicago, Ill.		Waterman-Waterbury Co., Minneapolis, Minn.
Allred Mfg. Co., Indianapolis, Ind.	Henry Furnace & Fdy. Co., Cleveland, Ohio		Heaters—School Room.
Milwaukee Corrugating Co., Milwaukee, Wis.	Hero Furnace Co., Sycamore, Ill.		Floral City Heater Co., Monroe, Mich.
Diffuser—Air Duct.	Hess-Snyder Co., Massillon, Ohio		Hero Furnace Co., The, Peoria, Ill.
Aeolus-Dickinson Co., Chicago, Ill.	Homer Furnace Co., Coldwater, Mich.		Standard Furnace & Supply Co., Omaha, Neb.
Doors—Metal.	International Heater Co., Utica, N. Y.		Waterman-Waterbury Co., Minneapolis, Minn.
David Lupton's Sons Co., Philadelphia, Pa.	Kruse Co., Indianapolis, Ind.		Humidifiers.
Eaves Trough.	Lamneck Co., W. E., Columbus, Ohio		National Air Moistener Co., Minneapolis, Minn.
Barnes Zinc Products Co., Chicago, Ill.	Langenberg Mfg. Co., St. Louis, Mo.		Jobs—Hardware.
Berger Bros. Co., Philadelphia, Pa.	Lennox Furnace Co., Marshalltown, Ia.		Clark-Smith Hardware Co., Peoria, Ill.
Berger Co., L. D., Philadelphia, Pa.	Liberty Foundry Co., St. Louis, Mo.		Kitchen Utensils.
Clark-Smith Hardware Co., Peoria, Ill.	Marshalltown Heater Co., Marshalltown, Iowa		Lalance & Grosjean Mfg. Co., Chicago, Ill.
Lupton's Sons Co., David, Philadelphia, Pa.	May-Fiebeger Furnace Co., Newark, Ohio		
Milwaukee Corrugating Co., Milwaukee, Wis.	Moyer Furnace Co., The, Peoria, Ill.		
New Jersey Zinc Sales Co., The, New York, N. Y.	Monitor Furnace Co., Peoria, Ill.		
Wheeling Corrugating Co., Wheeling, W. Va.	Mt. Vernon Furnace & Mfg. Co., Cincinnati, Ohio		
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American Rolling Mill Co., Middletown, Ohio	Oakland Foundry Co., Belleville, Ill.		
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WOMEN who know good
kitchen ware always look
for This Trade Mark when
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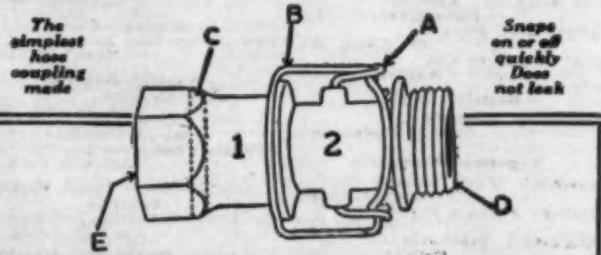


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Lasts longer
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American Steel & Wire Co., Chicago, Ill.	American Rolling Mill Co., Middletown, Ohio	Davis Co., Inc., C. S., Chicago, Ill.	Pecora Paint Co., Philadelphia, Pa.
Punches.	David Lupton's Sons Co., Philadelphia, Pa.	Granite City Steel Works, Granite City, Ill.	Tinplate.
Bertsch & Co., Cambridge City, Ind.	Milwaukee Corrugating Co., Milwaukee, Wis.	Merchant & Evans Co., Philadelphia, Pa.	Davis Co., Inc., C. S., Chicago, Ill.
Parker-Kalon Corp., New York, N. Y.	Kirk-Latty Mfg. Co., Cleveland, Ohio	National Enameling and Stamping Co., Granite City, Ill.	Granite City Steel Works, Granite City, Ill.
Peck, Stow & Wilcox Co., Southington, Conn.	Rivets—Stove.	Taylor Co., N. & G., Philadelphia, Pa.	Milwaukee Corrugating Co., Milwaukee, Wis.
Whitney Mfg. Co., W. A., Rockford, Ill.	Kirk-Latty Mfg. Co., Cleveland, Ohio	Sheets—Zinc.	National Enameling and Stamping Co., Granite City, Ill.
Whitney Metal Tool Co., Rockford, Ill.	Rivets—Stove.	New Jersey Zinc Sales Co., The, New York, N. Y.	Osborn Co., The J. M. & L. A., Cleveland, Ohio.
Punches—Combination Bench and Hand.	Rivets—Stove.	Shingles and Tiles—Metal.	Taylor Co., N. & G., Philadelphia, Pa.
Parker-Kalon Corp., New York, N. Y.	Kirk-Latty Mfg. Co., Cleveland, Ohio	Cortright Metal Roofing Co., Philadelphia, Pa.	Tin—Perforated.
Whitney Metal Tool Co., Rockford, Ill.	Rivets—Stove.	Hopson & Co., W. C., Grand Rapids, Mich.	Harrington & King Perforating Co., Chicago, Ill.
Whitney Mfg. Co., W. A., Rockford, Ill.	Rivets—Stove.	Milwaukee Corrugating Co., Milwaukee, Wis.	Tools—Tinsmith's.
Punches—Hand.	Rivets—Stove.	Wheeling Corrugating Co., Wheeling, W. Va.	Bertsch & Co., Cambridge City, Ind.
Whitney Metal Tool Co., Rockford, Ill.	Rivets—Stove.	Shingles—Asphalt.	Chicago Elbow Machine Co., Oak Park, Ill.
Whitney Mfg. Co., W. A., Rockford, Ill.	Rivets—Stove.	Sail Mountain Co., Chicago, Ill.	Dreis & Krump Mfg. Co., Chicago, Ill.
Putty—Stove	Rivets—Stove.	Shingles—Zinc.	Great Lakes Supply Co., South Chicago, Ill.
Connors Paint Mfg. Co., Wm., Troy, N. Y.	Rivets—Stove.	Milwaukee Corrugating Co., Milwaukee, Wis.	Hopson & Co., W. C., Grand Rapids, Mich.
Pecora Paint Co., Philadelphia, Pa.	Rivets—Stove.	Sifters—Ash.	Marshalltown Mfg. Co., Marshalltown, Iowa.
Quadrants—Damper	Rivets—Stove.	Diener Mfg. Co., G. W., Chicago, Ill.	Osborn Co., The J. M. & L. A., Cleveland, Ohio.
Parker-Kalon Corp., New York, N. Y.	Rivets—Stove.	Sky Lights.	Peck, Stow & Wilcox Co., Southington, Conn.
Radio—Sets and Supplies.	Rivets—Stove.	David Lupton's Sons Co., Philadelphia, Pa.	Ryerson & Son, Inc., Joseph T., Chicago, Ill.
Williams Hardware Co., Streator, Ill.	Rivets—Stove.	Milwaukee Corrugating Co., Milwaukee, Wis.	Unishear Co., The, New York, N. Y.
Ranges—Combination Gas & Coal	Rivets—Stove.	Smoke Pipe—Cast Iron.	Viking Shear Co., Erie, Pa.
Cox Stove Co., Abram, Philadelphia-Chicago	Rivets—Stove.	Heating Systems & Supply Co., Chicago, Ill.	Whitney Mfg. Co., W. A., Rockford, Ill.
Quick Meal Stove Co., St. Louis, Mo.	Rivets—Stove.	Snips	Whitney Metal Tool Co., Rockford, Ill.
Thatcher Co., Newark, N. J.	Rivets—Stove.	Peck, Stow & Wilcox Co., Southington, Conn.	Torches.
Ranges—Gas.	Rivets—Stove.	Solder.	Berns Co., Otto, Newark, N. J.
Cox Stove Co., Abram, Philadelphia-Chicago	Rivets—Stove.	Chicago Solder Co., Chicago, Ill.	Burgess Soldering Furnace Co., Columbus, Ohio.
Quick Meal Stove Co., St. Louis, Mo.	Rivets—Stove.	Double-Duty Elbow Co., Aurora, Ill.	Clayton & Lambert Mfg. Co., Detroit, Mich.
Gray & Dudley Co., Nashville, Tenn.	Rivets—Stove.	Milwaukee Corrugating Co., Milwaukee, Wis.	Diener Mfg. Co., G. W., Chicago, Ill.
Register Shields	Rivets—Stove.	S. L. Products Co., Council Bluffs, Iowa.	Double Blast Mfg. Co., North Chicago, Ill.
Hardware Specialty Co., Fort Wayne, Ind.	Rivets—Stove.	Solder—Aluminum	Quick Meal Stove Co., St. Louis, Mo.
Registers—Warm Air.	Rivets—Stove.	S. L. Products Co., Council Bluffs, Iowa.	Trade Extension.
American Wood Register Co., Plymouth, Ind.	Rivets—Stove.	Soldering Furnaces.	Copper & Brass Research As- sociation, New York, N. Y.
Chicago Furnace Supply Co., Chicago, Ill.	Rivets—Stove.	Berns Co., Otto, Newark, N. J.	Sheet Steel Trade Extension Committee, Pittsburgh, Pa.
Eaglesfield Ventilator Co., Indianapolis, Ind.	Rivets—Stove.	Burgess Soldering Furnace Co., Columbus, Ohio.	Trimmings—Stove.
Excelsior Steel Furnace Co., Chicago, Ill.	Rivets—Stove.	Clayton & Lambert Mfg. Co., Detroit, Mich.	Fanner Mfg. Co., Cleveland, Ohio.
Hart & Cooley Co., New Britain, Conn.	Rivets—Stove.	Diener Mfg. Co., G. W., Chicago, Ill.	Ventilators.
Independent Register and Mfg. Co., Cleveland, Ohio	Rivets—Stove.	Double Blast Mfg. Co., North Chicago, Ill.	Arc Company, Chicago, Ill.
Lamneck & Co., W. E., Columbus, Ohio	Rivets—Stove.	Quick Meal Stove Co., St. Louis, Mo.	Aeolus Dickinson Co., Chicago, Ill.
Meyer & Bro. Co., F., Peoria, Ill.	Rivets—Stove.	Thermo Gas Furnace Co., Chicago, Ill.	Berger Bros. Co., Philadelphia, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.	Rivets—Stove.	Soldering Supplies.	Friedley-Voshardt Co., Chicago, Ill.
Mueller Furnace Co., L. J., Milwaukee, Wis.	Rivets—Stove.	Double-Duty Elbow Co., Aurora, Ill.	Hopson & Co., W. C., Grand Rapids, Mich.
Robinson Furnace Co., Chicago, Ill.	Rivets—Stove.	Special Chemicals Co., Highland Park, Ill.	David Lupton's Sons Co., Philadelphia, Pa.
Rock Island Register Co., Rock Island, Ill.	Rivets—Stove.	Specialties—Hardware.	Milwaukee Corrugating Co., Milwaukee, Wis.
Standard Furnace & Supply Co., Omaha, Neb.	Rivets—Stove.	Diener Mfg. Co., G. W., Chicago, Ill.	Royal Ventilator Co., Milwaukee, Wis.
Stearns Register Co., Detroit, Mich.	Rivets—Stove.	Double-Duty Elbow Co., Aurora, Ill.	Standard Ventilator Co., Philadelphia, Pa.
Tuttle & Bailey Mfg. Co., Chicago, Ill.	Rivets—Stove.	St. Louis, Mo.	Sturtevant Co., Lewisburg, Pa.
United States Register Co., Battle Creek, Mich.	Rivets—Stove.	Steel Stampings.	Ventilators—Ceiling.
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Registers—Wood.	Rivets—Stove.	Steve Pipe Reducers.	Hart & Cooley Co., New Britain, Conn.
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WANTS AND SALES

For paid yearly subscribers, AMERICAN ARTISAN AND HARDWARE RECORD will insert under this head advertisements of not more than fifty words WITHOUT CHARGE. Employers wishing to secure employees, parties desiring to purchase or sell business, secure partners, or to exchange, etc., will find that these pages offer excellent opportunities to satisfy their wants. Clerks and tinsmiths looking for situations will find it to their advantage to use these columns. Those who respond to these announcements please mention that they "READ THE ADVERTISEMENT IN AMERICAN ARTISAN AND HARDWARE RECORD."

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LIGHTNING RODS—Dealers who are selling Lightning Protection will make money by writing us for our latest Factory to Dealer Prices. We employ no salesmen and save you all overhead charges. Our Pure Copper Cable is endorsed by the Mutual Insurance Companies and hundreds of reliable dealers. Write today for samples and prices. L. K. DIDDIE CO., Marshfield, Wis.

For Sale—Fine hardware and sheet metal shop. Last year's business over \$40,000. 2 Dodge trucks, fine set of tinsmith's tools. Cheap rent, fine location. Will invoice around \$6,500, will take \$5,000 if sold at once. Plenty of work on hand with cheap help. If you are a worker or want to jump into an established business here is a chance. Have a fine patent and must sell one or the other. Address Hardware, 1475 South Pearl Street, Denver, Colorado. 13-3t

For Sale—Only plumbing shop in town of 1400. Children finishing high school. Wishes to move to college town. Will sacrifice for quick sale. Plumbing, heating, sheet metal, windmills and engines. Cleared \$3,000 last year. Stock about \$5,000. Will sell stock and building for \$7,000. A real chance for a live man. Address B-56, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

For Sale—Auto radiator and sheet metal business, including machines, tools and stock. Old established in city of 35,000 population. First-class location in Wisconsin. The only up-to-date radiator shop in city. Doing from \$900 to \$1,000 per month. Reason for selling, on account poor health. Address B-44, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

For Sale—A hardware business; positively the biggest opportunity and choicest location in northern Illinois. Community growing faster than a Florida boom. Owner wants to devote more time to his rapidly growing plumbing business. Invoice about \$15,000. Terms. Address B-57, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

For Sale—By reason of an overstock we are offering one 400-egg Queen incubator and two 100-egg each round Simplicity incubators for the special price of only \$64.20. Will also be sold separately if so desired. Above are entirely new stock. Address John Albers & Co., Fort Loramie, Ohio. 15-3t

For Sale—Retiring. Have a small stock of hardware. Complete set of tinsmith's tools. All fixtures and shelving, safe, etc. Long established. Hope you will see me. Twenty minutes from the loop. 2136 Larabee Street, Chicago, Illinois. 15-3t

Wanted—Partner. A practical sheet metal worker to take charge of all the work and shop. Located in Cleveland, Ohio. Come in now for \$1,500 before the season opens. Address B-42, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

BUSINESS CHANCES

For Sale—Complete equipment for sheet metal shop. Brakes, 30 in. roll, stake, bench brake, drill press, mandrel, 2 Whitney punches, 2 benches, ladders and numerous small tools. Complete outfit at a bargain. Write at once. G. A. Stevens, 616 Barry Avenue, Chicago, Illinois. 14-3t

For Sale—Weatherly's Furnace and sheet metal works in Grand Rapids, Michigan. A good opportunity for somebody. Long established and a good location. Ill health cause of selling. Address C. S. Weatherly, 949 Cherry Street, S. E., Grand Rapids, Michigan. 14-3t

For Sale—Established fully equipped tin shop in Port Arthur, Texas. Population 40,000. Retiring on account of old age. Opportunity for a hustler. Address P. A. Wutke, 1712 5th Street, Port Arthur, Texas. 13-3t

For Sale—750 ft. of Goshen Copper Cable lightning conductor, with points, vanes and supports. Address Kemp & Jordan, Waynesville, Ohio. 13-3t

HELP WANTED

Wanted—A first-class tinner, a man that is capable of laying out any kind of work; one that can furnish excellent references. Prefer a man that belongs to the Masonic order. No. 1 wages to the right kind of a man. Steady work the year around. Please state in first letter the number of years you have worked and where now employed. Address Margin Hardware, Rockford, Illinois. 13-3t

Wanted—Tinner and sheet metal worker for steel garage and tank work of all kinds. Must be able to handle men and take charge of shop. Give references, age and salary expected. Address Commercial Steel Works, Inc., 1000 North Market Street, St. Louis, Missouri. 13-3t

Wanted—An all around plumber and sheet metal man, familiar with work in a small town. Only shop in a village of 2,000, near Detroit. Steady work for the right man. Must not touch liquor. State wages expected. Address B-49, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 14-3t

Wanted—Combination plumber and tinner. One that understands furnace work. Also steamfitter, an all-around man. This is a steady year-around job for the right man. Please state wages expected in first letter. Address B-45, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

Wanted—Union tinner; one who is capable of taking charge of sheet metal and furnace shop. None other need apply. Address B-48, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

Wanted—A first-class tinsmith and furnace man with some knowledge of plumbing. Steady job year around for right man. Non-union. Address Cloverland Sheet Metal Works, Iron River, Michigan. 15-3t

Wanted—A first class salesman to sell Maytag Washing Machines. Must be a hustler. House to house canvassing and demonstrating. Commission. Address Sturm's Tin Shop, Macomb, Illinois. 14-3t

Wanted—First class sheet metal worker and plumber. Steady position the year around. Address B-40, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

Wanted—Tinner and handy man. \$20 per week with two furnished rooms. Married man preferred. Address C. Eckhard, 512 E. Broadway, Alton, Illinois. 15-3t

Wanted—Good reliable tinner. Address H. S. Rasmussen, P. O. Box 278, George, Iowa. 13-3t

SITUATION WANTED

Situation Wanted—By a combination sheet metal worker, plumber and pipe fitter with 20 years' experience. Have been in one place for over nine years. Do not use tobacco or liquor in any form. Can furnish the best of references as to character and workmanship. State wages and hours in first letter. Only steady employment considered. Address B-52, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 14-3t

SITUATION WANTED

Situation Wanted—By a first-class sheet metal worker. Am able to lay out my own work. Can do inside and outside work. Am sober and reliable. Steady position. Have had 15 years' experience. Kindly state wages, hours and class of work you do in first letter. Can come at once. Address G. W. Mills, 217 East Dubuque Avenue, South Bend, Indiana. 15-3t

Situation Wanted—By sheet metal worker and furnace man, stove repairing. Have had four years' experience in hardware store and selling farm machinery. Prefer western Montana, northern Idaho or Washington. Married. 44 years of age. Can start after the first week in May. Address Geo. W. Burton, P. O. Box 127, Anaconda, Montana. 15-3t

Situation Wanted—By first class sheet metal worker, plumber and furnace installer. Also radiator repairing and all general repairing. Would like steady position where there is plenty of work. Address B-41, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

Situation Wanted—As branch manager or foreman for a reliable moist air heating firm. Am 24 years of age with 8 years of practical experience. Do not use liquor or tobacco in any form. Can furnish the best of references. Address 5016 Halifax Avenue South, Minneapolis, Minnesota. 12-3t

Situation Wanted—By buyer and manager for retail hardware store. Have had 15 years' experience in the retail hardware business; also 15 years' road experience. Address B-46, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

Situation Wanted—By young man experienced in furnace factory, is learning the sheet metal trade, and would like to get in shop doing inside and outside work. Address B-54, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 14-3t

Situation Wanted—By first-class tinner and sheet metal worker. 20 years' experience. Address B-35, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 12-3t

Situation Wanted—By tinner and furnace installer. Prefer shop that also does radiator repairing. Address Tinner, 426 South Chicago Avenue, Freeport, Illinois. 14-3t

Situation Wanted—By a first-class sheet metal worker. Small town preferred. Address B-53, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 14-3t

Situation Wanted—By a first-class tinner and furnace man, experienced in all branches of the trade. Wisconsin preferred. Address B-39, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

TINNERS' TOOLS

For Sale—Slightly used, one 52 washer used for demonstrating last summer. Retails for \$165, will let it go for only \$119. One Myers store ladder ceiling 12 ft. high. 1 hand Hiller elevator in basement 7 ft. high. 1 square shear 30" Pexto. Must be sold next week. Address B-51, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 14-3t

For Sale—One sheet iron folder 30 in.; one set of forming rolls 30 in.; one small burring machine; one small turning machine; one wiring machine; one large beading machine; one blow horn stake; one beak horn stake. First draft for \$40.00 takes them. Address B-50, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 14-3t

For Sale—One 10-foot steel brake, one 30-inch or 36-inch adjustable bar folder. Write Pioneer Cornice Works, 159 N. W. 5th St., Miami, Florida. 15-3t

For Sale—8 ft. Chicago steel brake, No. 4, for 18-gauge and lighter iron. Good as new; has not been used enough to scratch the paint but a little. \$125.00 buys it. F. o. b. cars. Also 20-inch P. S. & W. adjustable bar folder; good as new; \$30. Address B-58, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 15-3t

TINNERS' TOOLS

For Sale—One Pexto beading machine No. 620, one pair O. G. rolls and standard \$16.00; one small burring machine without standard \$5.00; one stove pipe crimper without O. G. rolls or standard \$7.00; one roll 1 1/2" x 30" \$11.00. F. O. B. Clinton, W. W. Seifried, 106 East Green Street, Clinton, Missouri. 13-3t

For Sale—Very complete set of sheet metal tools and machinery; good as new. Will consider selling this well established business in whole or part. Price very reasonable. Location, Milwaukee, Wisconsin. Address B-55, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 14-3t

Wanted—Squaring shears blades to sharpen. 24-hour service. \$1.50 per set. All work guaranteed. Address P. C. Woods, 1002 East Main Street, Washington, Iowa. 13-3t

For Sale—One Peck Stow Wilcox No. 130 "A" Square Shears in good condition. \$30.00. Address Metzger Sheet Metal Works, 144 North Edwards Street, Kalamazoo, Michigan. 14-3t

For Sale—One set of tanners' tools in good shape. Complete except brake. For information write J. A. Conrad, 860 Vine Street, Beloit, Wisconsin. 15-3t

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We are looking for several good, wide-awake salesmen, not necessarily experienced in the furnace business, to represent a thoroughly established furnace line in Minnesota, central Wisconsin and northern Illinois. Please state qualifications and past experience in first letter. Address B-63, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 15-3t

WANTED

- 1—Power driven circle shear and flanger.
- 1—Set power driven forming rolls, 1/4" cap.
- 1—Any length from 5' 0" to 8' 0".
- 1—Brake 8' 0" capacity 14 gauge.
- 1—Hand operated slitting shear, 1/4" cap.

All machines must be in a guaranteed condition. State capacity, and manufacturer's name, and place where machines may be inspected. Address B-62, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 15-3t

SALESMAN WANTED

Experienced and successful stove and range salesman. Good proposition for a good man. Address Gray & Dudley Company, Manufacturers of Washington Stoves and Ranges, Nashville, Tennessee. 7-21

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Who is thoroughly versed in all branches of Warm Air Heating. He must have sales experience and sufficient executive ability to act as Heating Engineer. There will be traveling to do until the work is well organized. We prefer a man above 38 years of age. Must have tact, diplomacy and personality. All replies will be treated in strictest confidence. Address L-57, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

FOREMAN WANTED

For Tin Fitting Department in large Furnace Fitting Factory. Location Midwest. State age and experience. Address L-60, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 14-3t

WANTED

At once, experienced representative to sell a high class and well known line of all kinds of stoves and furnaces in western New York. Address L-59, care AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 14-3t



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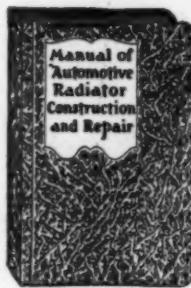
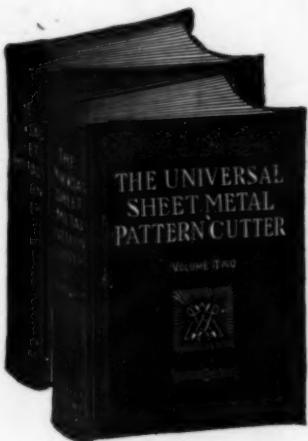
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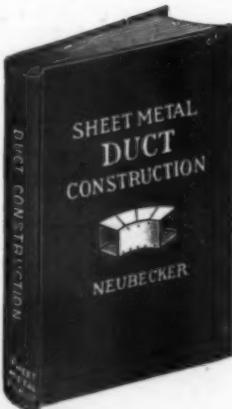
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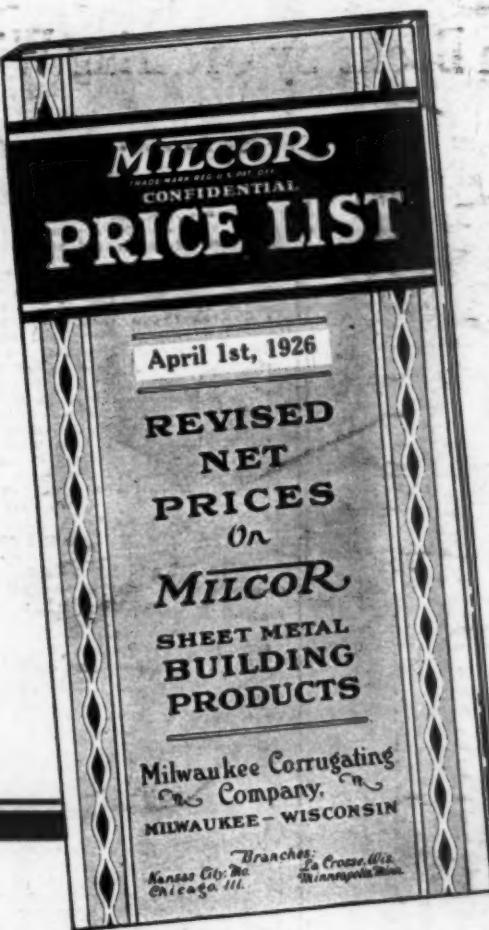
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